WWW.ASUMAG.COM
WWW.SCHOOLDESIGNS.COM

# AMERICAN SCHOOL & UNIVERSITY®

SHAPING FACILITIES & BUSINESS DECISIONS
MARCH 2008

## TECHNOLOGY PUSH

The impact on education and how it is transforming facilities.

### ALSO INSIDE:

- **Washrooms/Locker Rooms** How to improve conservation
- **Flooring/Carpeting** Ensuring long-term performance
- **Security/Life Safety** Meeting threats with technology
- **SPECIAL SECTION** GREEN Schools & Universities

A PENTON MEDIA PUBLICATION

# Innovative flooring solutions

Experts all over the world, from prominent architects and facility managers to professional cleaners, agree that Forbo Flooring Systems offers ideal floor coverings for education environments. Forbo's Marmoleum is naturally hygienic, hard-wearing, and attractive. Made from readily renewable ingredients, Marmoleum is anti-static and antimicrobial.

Marmoleum features Topshield, an occupancy-ready, water-based finish that reduces cleaning costs and provides better long-term appearance retention than any other resilient flooring.

From the indoor environment to the natural environment, Forbo's products and services combine design and functionality to create better environments.

**Circle 101 for more information ■ freeproductinfo.net/asu**

Forbo Flooring Systems
1-800-842-7839
www.forboflooringNA.com
www.floorcostcomparison.com

**creating better environments**

marmoleum®
topshield
SMART certified The standard for sustainable living®
forbo FLOORING SYSTEMS

**Sierra™ Series Solid Color Reinforced Composite (SCRC) Toilet Partitions.**

SCRC's non-ghosting graffiti removal and scratch resistance have been tested as superior to untreated HDPE, Metal and Polypropylene (ASTM: D6578-00; D2197-98 2002). Graffiti is easily removed on site using commercially available cleaners. Also, SCRC meets a Class B interior finish fire rating (ASTM E84). Independent test results available on request. © 2006 Bobrick Washroom Equipment, Inc., 800/553-1600, bobrick.com.

**Circle 102 for more information ■ freeproductinfo.net/asu**

AMERICAN
SCHOOL & UNIVERSITY®
SHAPING FACILITIES & BUSINESS DECISIONS
VOLUME 80 • MARCH 2008 • NUMBER 7

# CONTENTS

## DEPARTMENTS

6 EDITOR'S FOCUS
10 INSIDE: JOINT-USE FACILITIES
11 CONSTRUCTION ZONE: NEW CONSTRUCTION
14 KNOW-HOW: ACOUSTICS

VIEWPOINT:
50 GREEN CLEANING
52 FACILITY PLANNING
54 TECH TALK

56 PRODUCT SOLUTIONS
66 AD INDEX

## COVER STORY

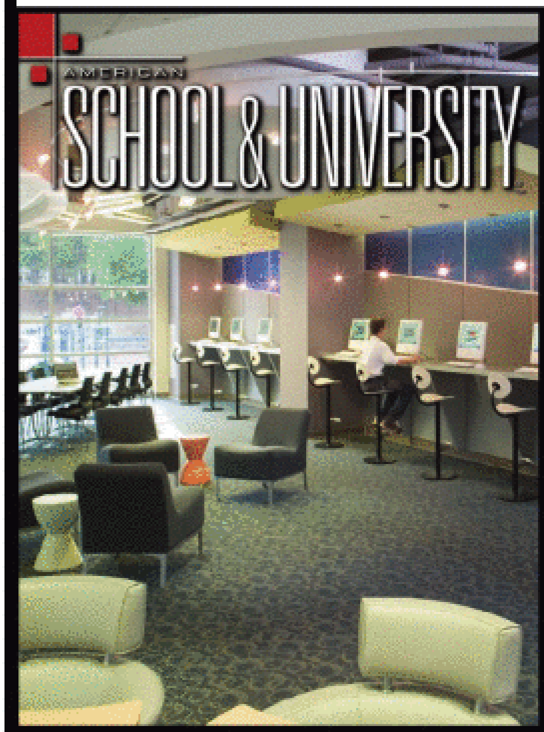
16 TECHNOLOGY PUSH
KEEPING UP WITH TECHNOLOGY IN THE CENTRAL OFFICE, THE CLASSROOM AND ALL POINTS IN BETWEEN CAN IMPROVE SCHOOL AND UNIVERSITY OPERATIONS.

FLOORING/CARPETING
24 THOROUGH CONTROL
CONDUCTING AN ORGANIZED MAINTENANCE REGIMEN.

SECURITY/LIFE SAFETY
30 PLANNING FOR BATTLE
CAREFUL PLANNING CAN ENHANCE COMMUNICATIONS.

WASHROOMS/LOCKER ROOMS
34 FRUGAL FLOW
SYSTEMS TO REDUCE WATER USE IN RESTROOMS.

SPECIAL SECTION
38 GREEN SCHOOLS & UNIVERSITIES
STRATEGIES TO CREATE SUSTAINABLE, HIGH-PERFORMANCE FACILITIES.




**On the Cover:** The Fred Rowan Family Middle School at Holy Innocents' Episcopal School, Atlanta; Architect: Collins Cooper Carusi Architects, Inc.; Photographer: Rion Rizzo/Creative Sources Photography, Inc.

**Be among the best of the best!**
Enter exceptional projects into the 2008 Educational Interiors Showcase. Find entry information, including submission guidelines and entry forms, at SchoolDesigns.com.

www.ASUmag.com · www.SchoolDesigns.com

The New Standard in Water Efficiency
SLOAN
ECOS™
The World's First TRUE Dual-Flush Electronic Flushometer
SLOAN
The new Sloan ECOS™ Dual-Flush Flushometer is the first electronic valve of its kind. Advanced Sensor Technology allows for hands-free operation while still delivering water-saving dual-flush performance. The valve senses the user's proximity and duration and delivers the proper flush volume based on these factors. Intuitive dual-flush override buttons ensure efficiency. Whether flushed manually or automatically, the new Sloan ECOS offers unequaled efficiency and reliable performance.
• Smart dual-flush sensing technology delivers appropriate flush volume – automatically
• Ground-breaking water efficiency
• Intuitive dual-flush override buttons
• State-of-the-art sensor eliminates false flushing
For more information, go to **www.waterefficiency.com**.
*Generating Efficiency Through Technology*
SLOAN®
866-663-2289
www.sloanvalve.com
Patents Pending
**Circle 103 for more information ■ freeproductinfo.net/asu**

# Oh, Brother

I'll admit it. When I was in college, I had the most popular room in my residence hall. Not just because I had a single room or a brand-new six-disc CD changer. It was my Brother word processor. Some of my dorm-mates felt lucky to have an electronic typewriter, but this machine had a screen *and* a printer. I actually could edit my work without whiteout or retyping a whole page!

It goes without saying that times have changed. My "archaic" word processor would be laughed at if I still had it today, and I would be laughing the loudest. Or worse, students might look at it and wonder what on earth it was used for.

Today's students have the latest technology at home, and they expect it in school as well. The challenge lies in what technology to buy, and when to buy it for the best return on investment (ROI).

One of the questions we asked on SchoolhouseBeat: The Blog recently centered on that question: Do you invest and put into practice the latest technology without question, or are you reluctant to put new technology in the hands of staff who may not know how to use it effectively?

One interesting answer was from Gregg: "My experience, especially as a security consultant, has been that schools go all out for any technology that is cutting-edge without regard to real-world applications. Often, administrators want to compare their school system to a business, but never figure what the ROI will be. I see many schools having systems that most businesses have elected not to use yet due to cost and the return they expect from that investment. Most of the overdoing is because of 'experts' telling the administrators they need it without the administrators ever questioning if it is going to improve the education process."

Another interesting answer was from Doug: "Technology is a delivery system. Its best uses come only after the curriculum has been designed to use it effectively. Technology is not something to just be layered on top of an already existing curriculum."

Is your institution on the technology bandwagon, or do you have more of a "wait-and-see" attitude? ■

slustig@asumag.com

## WEB 101

### The more you know

More violence hit a college campus on Valentine's Day this year, when a gunman burst into a lecture hall on the Northern Illinois University (NIU) campus in DeKalb. Five students were killed and 16 others were injured. The shooter, a former student, killed himself after firing at least 48 times into the classroom.

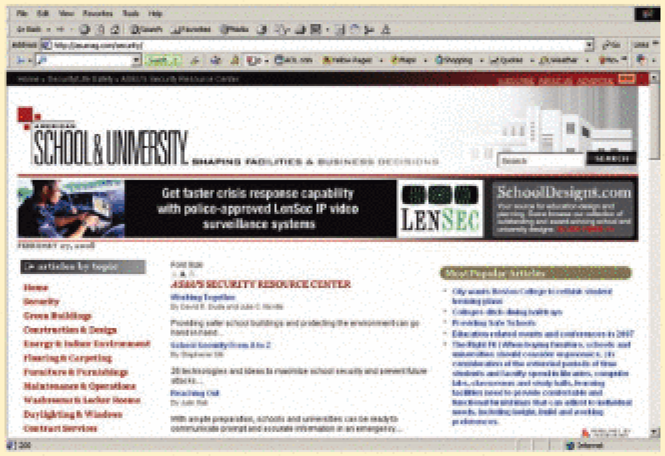
Before the shooting, the university had an emergency plan in place. Do you?

Although even the best planning likely won't prevent something like what happened at NIU, the more prepared an institution is, the better.

Visit our Security Resource Center at www.ASUmag.com/security for ideas. You'll find articles on:

- •Emergency-management plans.
- •Security technology.
- •Access-control systems.
- •Site hazard management.
- •Photo identification systems.
- •Life safety.
- •Doors/entry systems … and more!

*—Susan Lustig*




The Security Resource Center at ASUmag.com

**risk** \'risk\ *n.* Worth taking in Vegas, but not with your building envelope assets.

In facility management, a proactive approach that results in a greater return on your budget is always your best bet. That's where the patented, proven Tremco ManagedAssets™ program pays off big time. It begins with an inventory and diagnostics of your building envelopes, then continues with repair, restoration or replacement to bring components to a watertight standard. What comes next—planned preventive maintenance and transfer of risk to Tremco—makes Tremco ManagedAssets a sure thing when it comes to your facility assets. To find out more, call 1-800-892-1872.

TREMCO®
Building Life. Managed.®

**Circle 104 for more information ■ freeproductinfo.net/asu**

# 2008

# Be Among the Best of the Best

# EDUCATIONAL INTERIORS SHOWCASE

Exceptional school design projects from across the country will be published in the August 2008 issue of *American School & University*.

Contact Molly Roudebush at 913-967-1959
or mroudebush@asumag.com
today to receive an official entry form.
Visit www.SchoolDesigns.com/interiors_showcase.html
for more information.

AMERICAN SCHOOL & UNIVERSITY





AMERICAN SCHOOL & UNIVERSITY

| | | |
|---|---|---|
| **Editor-in-Chief/Assoc. Publisher** | *Joe Agron* | *jagron@asumag.com* |
| **Executive Editor** | *Susan Lustig* | *slustig@asumag.com* |
| **Staff Writer** | *Mike Kennedy* | *mkennedy@asumag.com* |
| **Associate Editor** | *Julie Hall* | *jhall@asumag.com* |
| **Senior Art Director** | *Jennifer Ray* | *jray@asumag.com* |

**Editorial Contributors –** *Stephen Ashkin; C. William Day; Martin J. Dunn; Bob Hull; Richard Shaw; Association of School Business Officials International; American Institute of Architects Committee on Architecture for Education*

**Editorial Advisory Board**
*-David M. Hill, Director of Facilities/Operations, Blue Valley School District No. 229, Overland Park, Kan.*
*-Bruce Mather, Executive Director of Facilities Management, Elmhurst College, Ill.*
*-Bryan C. McGair, Assistant Superintendent for Finance and Support Services, Medford Township Public Schools, N.J.*
*-Martin Montaño, Capital Projects Administrator, Rio Rancho Public Schools, Rio Rancho, N.M.*
*-James E. Rydeen, FAIA, Armstrong Torseth Skold and Rydeen, Inc., Minneapolis.*

| | | |
|---|---|---|
| **Senior Vice President** | *Warren Bimblick* | *warren.bimblick@penton.com* |
| **Group Publisher** | *Gregg Herring* | *gregg.herring@penton.com* |
| **National Sales Manager** | *Bill Perry* | *bperry@asumag.com* |
| **Western Sales** | *John Pelletieri* | *jpb7@earthlink.net* |
| **Northeast/Upper Midwest Sales** | *JoAnne Romanek* | *jromanek@asumag.com* |
| **Midwest Sales** | *Tom Nilsen* | *tom.nilsen@penton.com* |
| **Classified Sales Manager** | *Gary Kazmier* | *gary.kazmier@penton.com* |
| **Online Sales/Marketing Mgr.** | *Julie Fincher* | *julie.fincher@penton.com* |
| **Senior Marketing Manager** | *Molly Roudebush* | *mroudebush@asumag.com* |
| **Marketing Manager** | *Susie Barroso* | *susie.barroso@penton.com* |
| **Senior Research Manager** | *Jan Rabinowitz* | *jan.rabinowitz@penton.com* |
| **List Rental** | *Walter Karl* | *www.walterkarl.com* |
| **Vice President – Production** | *Lisa Baird Parks* | *lisa.parks@penton.com* |
| **Production Manager** | *Melissa Langstaff* | *melissa.langstaff@penton.com* |
| **Ad Production Manager** | *Jessica Andreas* | *jessica.andreas@penton.com* |
| **Classified Ad Coordinator** | *Melissa Scheffler* | *melissa.scheffler@penton.com* |
| **Audience Mktg. Mgr./Circulation** | *Seth Olson* | *seth.olson@penton.com* |

Penton Media

**A PENTON MEDIA PUBLICATION**
**Chief Executive Officer –** *John French, john.french@penton.com*
**Chief Revenue Officer –** *Darrell Denny, darrell.denny@penton.com*

**MEMBER ORGANIZATIONS**
- Business Publication Audit of Circulation, Inc.
- Educational Press Association
- American Business Media

***American School & University*, Volume 80, Issue 7,** ISSN 0003-0945 is published by Penton Media Inc., 9800 Metcalf Ave., Overland Park, KS 66212, 913-341-1300.

**SINGLE COPIES**: To order single copies, call 866-505-7173 (USA) or 847-763-9504 (outside USA).

**SUBSCRIPTIONS**: Free and controlled circulation to qualified subscribers. Non-qualified persons may subscribe at the following rates: USA: 1 year, $69, 2 years, $109; Canada: 1 year, $79, 2 years, $139; other international: 1 year, $99, 2 years, $159. Prices subject to change. For subscriber services, write to *AS&U*, PO Box 2100, Skokie, IL 60076-7800; call 866-505-7173 (US) or 847-763-9504 (outside US); or visit asumag.com.

**POSTMASTER**: Send address changes to *AS&U*, P.O. Box 2100, Skokie, IL 60076-7800 USA.

**REPRINTS:** To purchase quality custom reprints or e-prints of articles appearing in this publication, contact Penton Reprints at 888-858-8851 (www.pentonreprints.com). Instant reprints and permissions may be purchased directly from our website (www.asumag.com); look for the iCopyright tag appended to the end of each article.

**PHOTOCOPIES:** Authorization to photocopy articles for internal corporate, personal or instructional use may be obtained from the Copyright Clearance Center (CCC) at 978-750-8400. Obtain further information at copyright.com.

**ARCHIVES AND MICROFORM:** This magazine is available for research and retrieval of selected archived articles from leading electronic databases and online search services, including Factiva, LexisNexis and Proquest. For microform availability, contact National Archive Publishing Company at 800-521-0600 or 734-761-4700, or search the Serials in Microform listings at napubco.com.

**PRIVACY POLICY:** Your privacy is a priority to us. For a detailed policy statement about privacy and information dissemination practices related to Penton Media products, please visit our website at penton.com.

**CORPORATE OFFICE:** Penton Media Inc., 249 W. 17th St., New York, NY 10011; penton.com



COPYRIGHT 2008
Penton Media Inc.
ALL RIGHTS RESERVED.

HON® has a full line of education furniture that's right for all grade levels. With designs based on input from teachers and students alike, it's durable enough to handle the toughest customers around. Request a catalog or find a specialized dealer at www.HONkids.com

HON®
Smart now. Smarter later.

© 2007 The HON Company.

Circle 105 for more information ■ freeproductinfo.net/asu

# INSIDE: JOINT-USE FACILITIES

**The Schoenbaum Family Center at Weinland Park.** Photo courtesy of The Ohio State University Photography Services

## SCHOOL, CHILDCARE CENTER SHARE CAMPUS

A shared-facilities arrangement between the Columbus (Ohio) school system and Ohio State University has resulted in a new elementary school and an adjacent childcare center operated by the university.

The Schoenbaum Family Center at Weinland Park opened in August and is operated by the university's College of Education and Human Ecology. It is adjacent to the newly constructed Weinland Park Elementary School, which the Columbus district opened during the 2006-07 school year.

The center provides childcare and early education for up to 88 children from birth to age 5, and provides opportunities for collaboration across programs for children birth through fifth grade. In addition, the center houses the A. Sophie Rogers Laboratory for Child and Family Studies, where college students learn about the cognitive, physical, social and emotional development of young children.

The center also is working with the elementary school to offer services to residents in the surrounding neighborhood, which is beset by poverty and unemployment.

## NANOTECH LAB OPENS AT U. OF OREGON

The University of Oregon has dedicated an underground nanotechnology laboratory on its Eugene campus.

The Lorry I. Lokey Laboratories building is a research center affiliated with the Oregon Nanoscience and Microtechnologies Institute (ONAMI), a consortium that includes the University of Oregon, Oregon Health & Science University, Oregon State University, Portland State University, Pacific Northwest National Laboratories and the region's high-technology companies.

The Lokey labs will contain more than 20 ultra-high-precision metrology, probe, lithography and bio-optics instruments not generally available except at major scientific facilities, the university says.

Researchers working in the building will pursue projects related to curing human diseases such as cancer, developing cheaper solar devices, cleaning up water and the environment, and creating other products and technology.

The building also provides space for industry partners. The first occupant of the Partnership Labs is Voxtel Inc. of Beaverton, Ore., a maker of high-performance photonic devices.

## PUBLIC-PRIVATE RESEARCH FACILITY

A public-private partnership has come together to help create a $150 million research facility on the University of Wisconsin campus in Madison.

The Wisconsin Institutes for Discovery will consist of two entities that will work collaboratively. The Wisconsin Institute for Discovery will be part of the university and its graduate school. The Morgridge Institute for Research will be privately operated and will provide space for industry interactions, including technology transfer and privately funded research. It will interact with and complement the public institute.

The objectives of the institutes, the university says, are to foster new approaches for integrating biotechnology, nanotechnology and information technologies; to establish educational components that will integrate cross-disciplinary science into K-12, undergraduate and graduate education; and to facilitate inventions that can be transferred to the marketplace to create jobs.

Funding for the institutes comes from the state of Wisconsin ($50 million), the Wisconsin Alumni Research Foundation ($50 million) and private donors John and Tashia Morgridge ($50 million). John Morgridge is the former chairman of Cisco Systems. ■

### Joint-use school projects in California that received state bond funds

| | |
|---|---|
| Proposition 1D (2006) | 54 projects |
| Proposition 55 (2004) | 57 projects |
| Proposition 47 (2002) | 53 projects |

*Source: California Office of Public School Construction, "Capital Outlay Report, Statistical and Fiscal Data"*

# On-campus housing

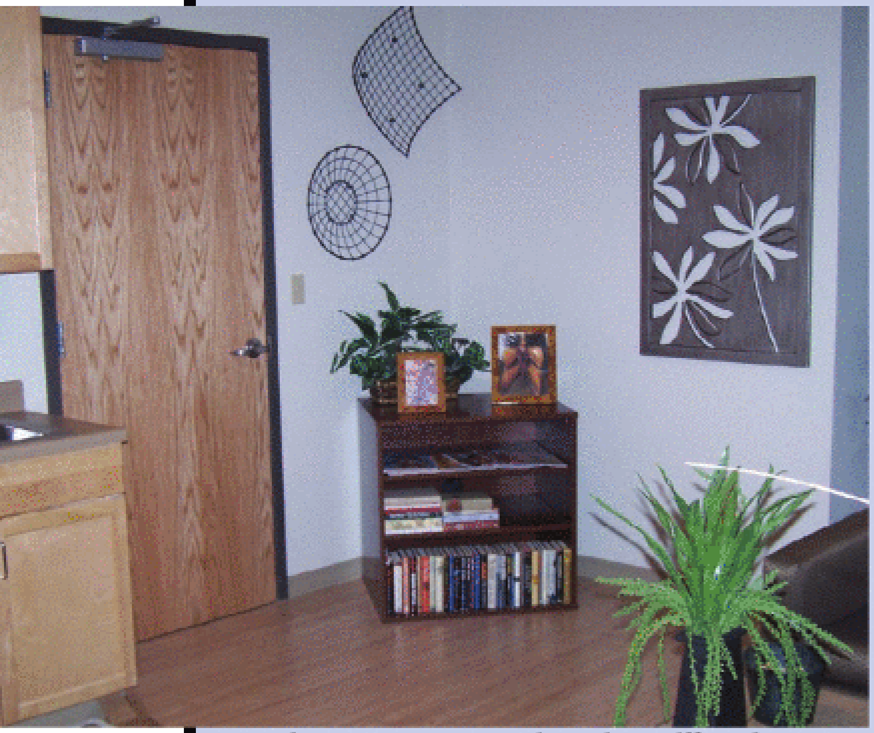
Gillespie Residence Hall and Student Center is the first student housing facility to be added to Harris-Stowe State University, St. Louis, since its founding 150 years ago.

Construction of the four-story residence hall began in July 2005 and was completed in August 2006. The $15 million facility can accommodate about 228 students and houses a student center that is open to the entire campus community. The suites include four bedrooms and two full bathrooms, a kitchen and combined living/dining area.

The student center amenities include a campus bookstore, computer lab, study area, large conference room, health and counseling suite, and student activities offices. A 150-seat amphitheater is situated outside the entrance.

The 82,000-square-foot residence hall was built using local basic materials to prevent fabrication and transportation delays.

The project architect is KAI Design & Build (St. Louis), and Kwame Building Group (St. Louis) provided pre-construction and construction-management services.



**Harris-Stowe State University, Gillespie Residence Hall, St. Louis**

**Carl Wunsche Sr. High School, Spring, Texas.** Photo courtesy of Richard Payne

# Career education

Carl Wunsche Sr. High School, Spring, Texas, is the result of a four-month visioning process conducted by school board members, district administrators, teachers, parents and students. Once they articulated a vision, the architect designed a career academy that integrates instruction in core subjects with studies in career fields to provide students with a relevant, real-world context for 21st-century learning. The design empowers educators to teach in a new way.

The facility features three career pods, instead of classrooms, that are either open cubical space or glass-encased, allowing students to see into one another's learning environments.

"This makes learning exciting," says Debi Koch, principal. "Students get to show off their work, and other students are motivated by what they see. It fosters a sense of respect among our students and adds to the feel of collaboration and openness."

The three career academies for legal, business and child studies; technology; and medical and biological services each serve about 500 students. Hands-on education is offered at the childcare center, veterinary clinic, culinary kitchen and automotive garage. There also is a television studio with broadcast-quality cameras and production equipment, and a state-certified courtroom, as well as numerous computer labs for graphic design, engineering, AutoCAD and other programming courses.

The architect for this project is SHW Group (Houston).

**Start**: March 2005
**Completion**: December 2006
**Project area**: 273,178 sq. ft.
**Cost**: $31,078,700

# Bond measure at work

Laura G. Rodriguez Elementary School, San Diego, is one of San Diego Unified School District's 12 new and three rebuilt schools being constructed with funding from Proposition MM, a $1.51 billion bond measure. The K-5 facility, which accommodates 650 students, was completed in time for the start of the 2007-08 school year.

The school is situated on a 6.5-acre lot and includes seven structural steel-framed buildings with plaster exteriors. The buildings house 32 new classrooms, a multipurpose room, library/media center, cafeteria and administrative spaces. It also features outdoor play areas and sports fields.

Because a severe grade change of about 16 feet split the north and south portions of the land, several massive, tiered masonry retaining walls had to be erected throughout the property. The walls required extremely high-strength mortar and grout because of the amount of pressure placed upon the walls by the higher surface. This required careful watch over quality control to attain the design compressive strengths.

**Laura G. Rodriguez Elementary School, San Diego**
Photo courtesy of Steve Whalen

The architect for this project is Platt/Whitelaw Architects, Inc. (San Diego). McCarthy Building Companies, Inc. (San Diego) is the construction manager.

# Student community

Tiger Village, a 77,000-square-foot, three-story residence hall at South Georgia College, Douglas, Ga., was designed with a masonry facade using two tones of buff brick that match surrounding campus buildings.

A grand entry lobby features a large, open staircase that connects all three levels of the $9.1 million residence hall. The two-story lobby includes a second-floor mezzanine that opens onto a balcony overlooking the courtyard. Common areas are situated in the building's center wing.

The residential living suites include two floor plans: a 978-square-foot suite with four single-occupied bedrooms, two bathrooms and a common living area; and a 406-square-foot semi-suite with two single-occupied bedrooms and one bathroom.

The architect for this project is Lord, Aeck & Sargent (Atlanta).

**South Georgia College, Tiger Village, Douglas, Ga.** Photo courtesy of Rion Rizzo/Creative Sources Photography, Inc.

**University of California, Berkeley, Underhill Parking Facility and Playing Field**

# Double duty

The University of California, Berkeley, recently completed the Underhill Parking Facility and Playing Field. Situated two blocks south of the main campus, the 1,000-space, four-level parking facility has two floors below ground and a spacious, 77,400-square-foot, multi-sport artificial turf field and running track on its rooftop.

Construction began in August 2005 following the demolition of the existing 223-space parking lot. This was followed by the erection of beams and columns, along with extensive concrete pours to form the walls and floors. The project was completed in January 2008.

The project's architect is Stantec (San Francisco). Walker Parking Consultants (San Francisco) served as prime designer and project engineer, and Overaa Construction (Richmond, Calif.) was the contractor. ■

ONE OF THE WORLD'S LARGEST LINE-UP JUST GOT LARGER

# DLP® TECHNOLOGY FROM SANYO

## INTRODUCING SANYO'S FIRST DLP PROJECTORS

PICTURE BY DLP TEXAS INSTRUMENTS

**It's true.** SANYO now has three DLP projectors. You get the DLP reliability, improved high resolution color performance, network control/administration, impressive brightness and high contrast ratio.

The three great SANYO DLP models fit a variety of applications. There's the 5.5 pound PDG-DSU20N, ultra-compact portable SVGA projector with 2000 ANSI lumens, a contrast ratio of 2000:1 and a zoom lens that can throw a crisp 100" diagonal or up to a 300" diagonal screen image. The table top, 2100:1 contrast ratio PDG-DWT50L offers full wide XGA (1280 x 768) for 4500 ANSI lumen HD images and network control. And the PDG-DXT10L features two projection lamps with 260W UHP that delivers an impressive 5200 ANSI lumens of brightness with a contrast ratio of 2100:1.

And just when you thought how can the comprehensive line of SANYO projectors get even better . . . there's DLP.

Call today or visit our website for more information on SANYO's full line of critically-acclaimed projectors.

Toll free: **888-337-1215 www.sanyoprojectors.com**

*SANYO. . . Providing Presentation Solutions.*

©2008 SANYO Presentation Technologies. Trademarks and logos are copyrights of their respective owners.

SANYO

**Circle 106 for more information ■ freeproductinfo.net/asu**

# Acoustics

Administrators must account for noise from a building's infrastructure to ensure proper classroom acoustics.

**Proper acoustics should be considered in the early stages of construction.**

A key step in providing good acoustics in a classroom is minimizing background noise. That can be a challenge when a facility's heating and ventilation systems, electrical equipment and plumbing generate noise that penetrates instructional areas.

In Philadelphia, for instance, the criteria for acoustics "is in conflict with the (district's) preferred HVAC delivery system of unit ventilators," according to the district's Building Design Criteria and Technical Standards. "This will require close coordination between the designers of the acoustics and HVAC systems."

The district's design criteria set out guidelines for HVAC, plumbing and electrical systems. In general, the criteria state that designers should situate equipment as far away from student locations as possible; where several pieces of equipment together create excessive noise in a learning space, the design should include additional sound-attenuation features.

Here are some of the guidelines related to specific systems:

•**HVAC**: Put all rotating equipment with static pressure control dampers at least 10 feet from classrooms. Put HVAC fan equipment serving more than one classroom farther from the classrooms than equipment serving only one classroom. Specify airfoil-shaped blades for centrifugal fans. Do not specify fans with forward curved blades. Do not place variable-air-volume boxes over a learning space unless measures are taken to meet required acoustic standards for the spaces.

•**Plumbing**: Run piping above corridor ceilings, not habitable spaces. Specify cast iron for waste-line piping whenever possible. Specify that all piping be isolated from building walls and structures by using compressible wrapping or resilient clamps and hangers. Where a plumbing wall must be situated next to a learning space, design the wall with a 1-inch gap between double rows of studs and two layers of gypsum board on the classroom side, plus sound-absorbing insulation batts in both stud cavities; or use solid masonry construction.

•**Electrical**: Specify low-noise light fixture ballasts. Put outlet and junction boxes on opposite sides of a stud wall so that they are separated by at least 24 inches, not within the same stud space.

The district's design criteria also state that designers and builders need to select construction materials that act to minimize the impact of noises from the exterior environment, such as: traffic; activities, such as sliding furniture on floors above a learning space; heavy rains on roofs above a learning space; slamming of locker doors in hallways near a learning space; aggressive writing on chalkboards attached to a wall shared with another learning space; and bouncing of balls in a gymnasium near a learning space. ■ –*Mike Kennedy*

## NOTABLE

**15 to 25** Acceptable background Noise Criteria (NC) rating for auditoriums and broadcast studios.

**25 to 35** Acceptable background NC rating for classrooms, laboratories, music rooms, offices and instructional media centers.

**40 to 45** Acceptable background NC rating for heavy circulation areas and assembly areas with amplification.

*Source: Building Design Criteria and Technical Standards, School District of Philadelphia*

# How easy is it to replace a chalkboard with a whiteboard?

## Just Peel. And Stick.

When you have an old chalkboard in a frame or a stained dry erase board, you don't need to install a new framed board. **Simply resurface it!**

EverWhite's resurfacing panels, with their exclusive pressure-sensitive backing, save you time and money by installing easily over any existing writing surface.

- ✓ **No Messy Adhesives**
- ✓ **Permanent Marker Removes Easily**
- ✓ **Lifetime Guaranteed Against Ghosting & Staining**
- ✓ **Custom Graphics Available**
- ✓ **Magnetic Surface**

EverWhite® by Glenroy, Inc.

www.everproducts.com | Phone 1-800-824-1482

**Circle 107 for more information ■ freeproductinfo.net/asu**

## Get your FREE Sample Pack Today!

Visit **www.everproducts.com/FREE.php** and fill out the simple form. Or, write your name, facility name, address, and phone number on a postcard and mail it to **FREE EverWhite Sample Pack**, PO Box 534, Menomonee Falls, WI 53052-0534, fax it to 1-262-250-7179, call us at 800-824-1482, or e-mail your information to everproducts@glenroy.com.

Even before we stumble out of our beds for the day, technology is intertwined in our lives. As we sleep, our computers hum with activity as they clean a hard drive or download software updates; the digital video recorder saves the cable movie being shown in the middle of the night; and the programmable thermostat clicks on the heat as dawn approaches.

Once awake, we grab for our cells phones, personal digital assistants and laptops to find out what has happened while we were snoozing. We commute to work in cars with global-positioning systems to show us the best route; we wait for green lights that are programmed to help traffic move with the greatest efficiency; and we are careful not to run a red light because the surveillance camera hovering above the intersection will capture our indiscretion.

And when students, teachers, administrators and others employed in education arrive at work every day on thousands of campuses across the nation, it should come as no surprise that at every step along the way, technology is there to greet them.

Technological advancements in education, as well as in facilities operation and management, are not a panacea. New technology can be frustrating and counterproductive when it is used improperly or when workers are not trained adequately. The tools that are designed to improve the performance of students and workers are only as effective as the people using them. But when effectively integrated into a school or university, technology can help create a better learning environment supported by a more efficient and effective support staff.

## Welcome to the 21st century

In the 1990s, President Bill Clinton and Vice President Al Gore pushed for technological advancements in education by embracing the metaphor of the information superhighway and building a bridge to the 21st century. In the eighth year of that new century, schools and universities have long ago crossed the bridge, and thousands of students, instructors and staff members are speeding along well-worn paths of that superhighway.

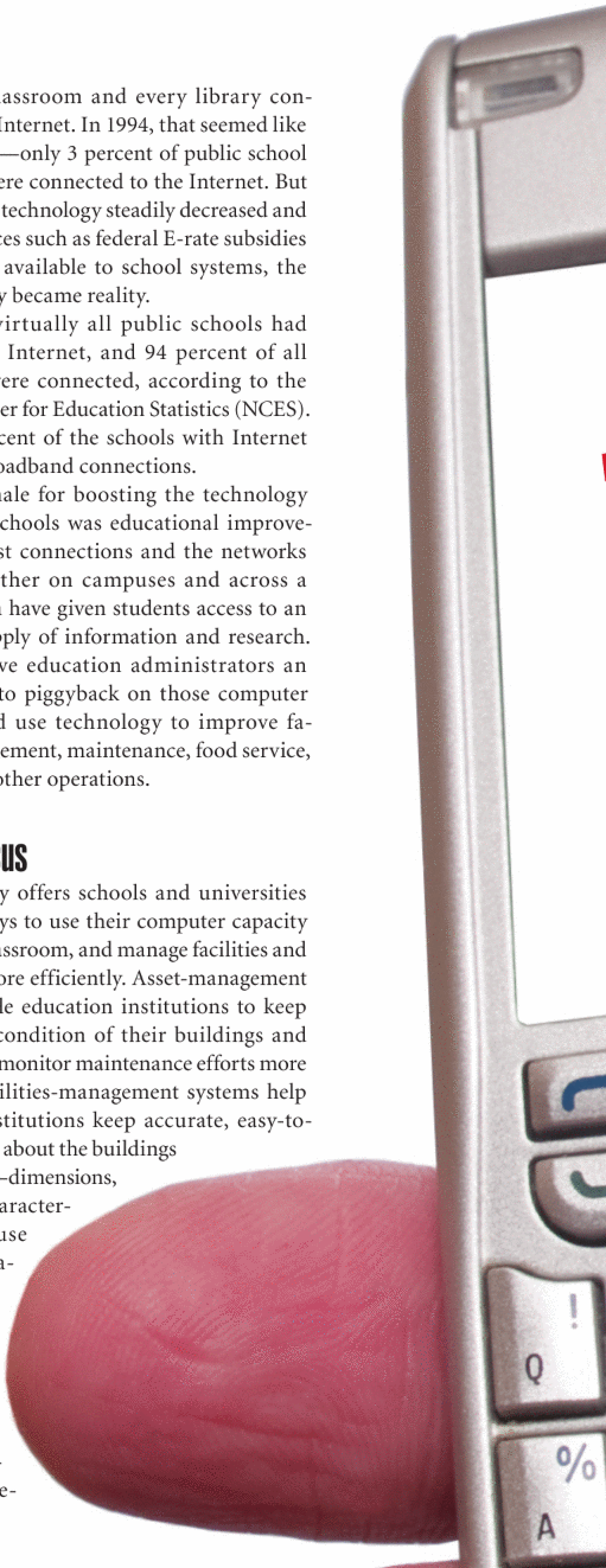
The Clinton administration's goal was to have every classroom and every library connected to the Internet. In 1994, that seemed like a pipe dream—only 3 percent of public school classrooms were connected to the Internet. But as the costs of technology steadily decreased and funding sources such as federal E-rate subsidies made money available to school systems, the dream quickly became reality.

In 2005, virtually all public schools had access to the Internet, and 94 percent of all classrooms were connected, according to the National Center for Education Statistics (NCES). About 97 percent of the schools with Internet access had broadband connections.

The rationale for boosting the technology available in schools was educational improvement. The fast connections and the networks stitched together on campuses and across a school system have given students access to an unending supply of information and research. They also gave education administrators an opportunity to piggyback on those computer networks and use technology to improve facilities management, maintenance, food service, security and other operations.

## Facility focus

Technology offers schools and universities numerous ways to use their computer capacity outside the classroom, and manage facilities and operations more efficiently. Asset-management systems enable education institutions to keep track of the condition of their buildings and grounds, and monitor maintenance efforts more precisely. Facilities-management systems help education institutions keep accurate, easy-to-access records about the buildings on a campus—dimensions, age, other characteristics—and use that information to determine when and how to allocate resources for maintenance, repairs, replace-



BY MIKE KENNEDY

# TECHNOLOGY PUSH

**Keeping up with technology in the central office, the classroom and all points in between can improve school and university operations.**

**Many colleges and universities are opening their virtual "doors" via online courses, podcasts and other Internet resources.**

## Letting information flow

A university campus is a wellspring of expertise and information. But relatively few people get a taste of all the knowledge available. A student might be getting a comprehensive education at an Ivy League school, but somewhere out there—in California, North Dakota or Poland, or maybe across campus in another department—is a professor or program with a unique outlook that could push the student to greater achievements.

Many higher-education institutions have decided that they don't want to confine what they have to offer to the borders of their campuses. The World Wide Web has erased those boundaries and enabled colleges and universities to share their information and resources with people, no matter how remote and distant.

The Massachusetts Institute of Technology in Cambridge began MIT OpenCourseWare in 2002 as a pilot project when the teaching materials—syllabi, lecture notes, assignments and exams—from 50 courses were posted on the school's website (http://ocw.mit.edu). In November 2007, MIT announced that materials from 1,800 courses—virtually every course offered—had been put online as part of the OpenCourseWare program.

MIT says that about 35 million people have accessed course materials since the program began, and 60 percent of those are from outside the United States.

Yale University in New Haven, Conn., is offering seven introductory courses (astronomy, English, philosophy, physics, political science, psychology and religious studies) as part of its Open Yale Courses program (http://open.yale.edu/courses/index.html). Each course is available for free and includes high-quality video versions of class lectures and other course materials such as syllabi, suggested readings and problem sets. The lecture videos can be downloaded, and an audio-only version and lecture transcripts also are available.

The program was begun, the school says, because "Yale … believes that leading universities can make an important contribution to expanding access to educational resources through the use of Internet technology."

Yale plans to add about 30 more courses in the next three years.

In February, the University of Indiana unveiled an online site, http://podcast.iu.edu, where Internet users can find audio or video podcasts from faculty and staff at all of the IU campuses. The podcasts include lectures, music, radio broadcasts, virtual museum tours and other information from university programs.

ment or expansion.

Computerized maintenance-management software enables education administrators to establish a comprehensive program to receive job requests, keep track of pending and completed maintenance work, maintain inventory of the products and supplies used, and supervise workers' schedules.

For the thousands of schools and universities building new facilities or remodeling existing space, construction-management software can help administrators and the key participants involved in a project—architects, contractors, vendors—stay up to speed on the status of a project and identify potential problems before they become too troublesome to solve. Information about a project is conveyed immediately, cutting down on bureaucracy and paperwork, and making each participant in the project more accountable about completing their responsibilities.

In libraries and cafeterias, schools and universities use technology to keep track of their inventory—who's buying food and how much, or who's borrowing which books or other materials.

## Unwired

When the 1990s technology push began, connecting to the Internet in most cases meant wiring schools and classrooms to a schoolwide or systemwide network. The technology of today has schools seeking to untether themselves from wires and

serve mobile computer users with wireless Internet connections. NCES statistics show that in 2005, about 45 percent of the schools with Internet access used wireless connections, and about 15 percent of public school classrooms had wireless connections.

Wireless connections can be less costly because wiring typically involves finding ways to hide wires in walls, under floors or in ceilings. Wireless computers unleash students from the cords that limit where they can work. It allows the learning environment to be more flexible and mobile.

At the forefront of the conversion to wireless connections to the Internet is the Philadelphia school system. In 2007, the 170,000-student system announced that it established wireless access to the Internet in all of its classrooms. About 75 percent of the $40 million cost of the system was covered by E-rate subsidies.

**Instead of just a few cameras at the most strategic "trouble spots" on a campus, schools and universities can afford to think volume and install hundreds of surveillance cameras.**

Wireless networks also can be set up quickly. In Greensburg, Kan., where a tornado in May 2007 destroyed most of the city, including its schools, workers installed a wireless computer network in less than one day to serve the 14 temporary buildings that comprise the makeshift replacement school.

## Safety alerts

Technology's ability to enhance security was shown again last month when gunfire erupted in a classroom at Northern Illinois University (NIU) in DeKalb.

Minutes after the shooting began at NIU, the school posted an alert on its website, sent e-mail messages to students and staff, and voice messages to students' residence hall phones warning them of the gunfire. More than a dozen messages were disseminated this way in the hours after

Circle 108 for more information ■ freeproductinfo.net/asu

the incident. They warned the community to stay away the King Commons, where the shootings occurred; let people know when the campus was again considered safe; and urged students to call their parents.

Such messaging systems have become more common on college campuses since the April 2007 shooting massacre at Virginia Tech. In the aftermath of that massacre, many said that if university officials had sent out a campus alert immediately after the first reports of a shooting, the second, more deadly wave of violence could have been prevented or diminished.

Many of the new messaging systems on campuses also enable colleges and universities to send text messages to cell phones; that feature was not available last month at NIU. Because cell phones have become so common and text messaging has become a routine way for many students to communicate, the ability to reach students this way is critical when information has to be disseminated widely and quickly.

## A thousand points of security

Technology also enables schools and universities to provide security to remote parts of buildings and campuses that used to go unmonitored by either security personnel or cameras.

Many campuses have relied on video surveillance for a long time. Such systems provided more security than having no cameras, but were hardly ideal. Old videotape systems often provided grainy, indistinct images. Saving and searching tape archives to unearth the necessary information was cumbersome and timely, if archives were even available.

Now, advancements in computer networks and digital technology have enabled security staff to overcome many of those drawbacks. Instead of just a few cameras at the most strategic "trouble spots" on a campus, schools and universities can afford to

## Interactive whiteboards

In the pre-computer era, schools had chalkboards or overhead projectors that teachers used to display information to a classroom of students. With the widespread availability of computers in classrooms, the information that teachers want to display or add to often is on a computer monitor. The solution for more and more schools is to install interactive whiteboards.

The boards enable instructors to project a computer onto a screen and use markers or styluses to add information to the projected image. Teachers can combine the spontaneity of writing on a chalkboard or whiteboard with the images and data unearthed via computer from the deep resources of the Internet. Hundreds of thousands of interactive whiteboards have been installed in classrooms of K-12 and higher-education campuses.

"Interactive whiteboards allow teachers to illustrate curriculum information visually, reinforce English vocabulary, and provide students opportunities to interact with a variety of visual media," says the Fairfax County (Va.) district's technology plan for 2008. "While well-chosen visual information for some students enriches their learning experiences, for others it provides critical information that clarifies confusions and allows them to understand the information being taught."

In December, the Greenwich (Conn.) school system announced that it was installing interactive whiteboards in all classrooms from grades 3 to 12. The plan covers 15 schools and is expected to take four years.

**Whiteboards enable students to interact with instructors. (Aveda Fredric's Institute, Education and Retail Facility, Indianapolis; Architect: Steed Hammond Paul Inc.)** Photo courtesy of Mark A. Steele Photography

TMASYSTEMS

Success Made Simple.

# Maintenance Management Software for Higher Education

Automate and streamline your maintenance operations with a single integrated CMMS solution.

Whether your educational facility requires a desktop solution or a web-based solution, TMA will meet your needs. With the flexibility to start small and add to your software, our scalable product set and optional modules will grow with your organization's needs, requirements, and demands.

TMASYSTEMS
800.862.1130
www.tmasystems.com
sales@tmasystems.com

Circle 109 for more information ■ freeproductinfo.net/asu

think volume and install hundreds of surveillance cameras.

In the 33,000-student Irving (Texas) district, more than 1,200 digital surveillance cameras are being installed on 30 school campuses and other district facilities.

J. Pat Lamb, director of security in the Irving district, says the majority of cameras are at middle and high school campuses—Irving High School will have more than 100 cameras—but each of the district's 20 elementary schools will have at least three cameras: at the front door, in the office and on the playground.

"Our emphasis is on life safety, inside and outside buildings," says Lamb. "We listen to what the principals say about where to place the cameras—where kids are getting into trouble."

New systems like the one in Irving operate over the district's Internet-connected computer network, so administrators can view security camera output from their home computers, and outside agencies such as the police and fire departments also have access.

"There is a big deterrence factor for students," says Lamb. "We want the kids to know that we are watching them."

And when deterrence doesn't work, and an incident occurs, Lamb says the system enables security personnel to quickly find and review the stored digital video from the relevant cameras. "The images are very crisp," he adds.

The camera saturation is one element of Irving's $4.2 million expenditure on technology to upgrade security. The schools there also have a system that checks the identity of campuses visitors and checks the names with databases of registered sex offenders.

Upon arriving at a school, a visitor provides a government-issued ID to a school receptionist, which is scanned into the school's system. If the name is not on the sex-offender database, the visitor gets a temporary ID badge with a photo.

"If students or anyone see someone in the school without a visitor badge, they immediately report it, and the person is escorted to the office," says Lamb.

If the visitor's information turns out to be a match on the sex-offender list, the school follows an established procedure for determining if the visit is appropriate and will be permitted.

Since October, Lamb says, Irving schools have had 62,000 visitors, and the system has flagged about a dozen sex offenders.

"We're a public schoolhouse, and we want people to feel welcome," says Lamb. "On the other hand, times are changing, and you have to be careful." ■

**Wireless connectivity enables classrooms to be more flexible and mobile. (Central Academy of Technology & Arts, Monroe, N.C.; Architect: MBAJ Architecture)** Photo courtesy of LOF Productions

**When effectively integrated into a school or university, technology can help create a better learning environment supported by a more efficient and effective support staff.**

*Kennedy, staff writer, can be reached at mkennedy@asumag.com.*

Key control solutions vital to secure learning environments

Pyramid®

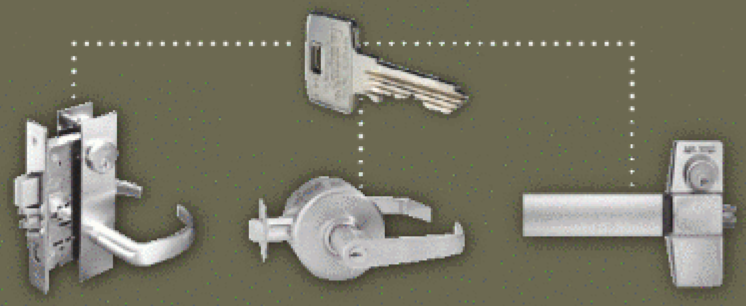
Master Key Systems

Pyramid® patented master key system offers the highest level of key control critical for asset and risk protection, personal safety and user friendliness. Combining a unique integrated control pin in the key and a locking pin mechanism in the cylinder, *Pyramid* exceeds industry security standards.

Restricted key blank distribution prevents unauthorized duplication. Hefty nickel silver keys withstand high usage and abusive applications. Hardened stainless steel pins in the UL437 High Security version further resist picking, drilling and other surreptitious entry. Available in Security and High Security, *Pyramid* is ideally suited for educational facilities.

Visit us at **corbinrusswin.com/29.html**

One Key Secures All




ASSA ABLOY, the global leader in door opening solutions

**Circle 110 for more information ■ freeproductinfo.net/asu**

**An effective cleaning and maintenance program is critical for education institutions that want their floors to last.**

# Thorough Control

## Regardless of the type of flooring, a well-organized maintenance regimen will help floors and carpets last.

**By Mike Kennedy**

Educators and administrators may differ over what kind of floor surfaces they prefer in their facilities—carpeting or hard flooring. Advocates on each side can make a case for their choices, depending on how a building is being used, the wishes of building occupants, or the budget they have available.

But no matter what kind of flooring a facility has, most people involved in maintaining schools would agree that an effective cleaning and maintenance program is critical for education institutions that want their floors to last. Poor or inconsistent cleaning and upkeep can result in surfaces that are dirty, unsafe and unhealthful.

CONTINUED...

Learn more about this revolutionary new modular backing at **www.encyclebacking.com or 800.554.6637**

encycle backing your future

patent pending

The Mohawk Group KARASTAN CONTRACT Lees BIGELOW COMMERCIAL

**Circle 111 for more information ▪ freeproductinfo.net/asu**

## Breathing easily

Focusing its attention on indoor air quality, the Asthma Regional Council of New England has put together a guide to help education institutions choose flooring for school facilities.

The guide, "Health Considerations When Choosing School Flooring," recommends that administrators look beyond the most commonly selected materials, carpeting and vinyl.

"Carpeting, when not scrupulously maintained, may be associated with health problems," says the guide. "A number of pollutants that are associated with respiratory illnesses, including dusts, mold and mildew, are captured and can grow in carpets and then get released into the air. Vinyl is also subject to mold and mildew when water pools below it."

An alternative choice, the council contends, is vinyl composition tufted textile (VCTT). The dense low-tufted textile will gather less dirt than conventional carpet and has a backing that is impermeable to water. It is more thoroughly cleaned by vacuuming than broadloom carpet and retains the broadloom characteristics of noise and glare control, and seating comfort. Still, VCTT can lead to indoor air problems.

"Although VCTT is an improvement over broadloom, it is still carpet," the guide says. "Its surface will retain some dirt, and when it gets wet (floods, leaks, spills) the surface can harbor mold and mildew within 24 hours."

The council recommends different flooring for specific areas of a school facility:

•**Classrooms:** Consider terrazzo, ceramic tile or concrete floors, with washable rugs, mats or cushions as needed for children to sit on.

•**Hallways and entries:** Use durable non-porous, low-maintenance hard materials, such as terrazzo, ceramic tile and concrete, with textured surfaces, and walkoff mats. Second choice is linoleum with walkoff mats.

•**Cafeterias and restrooms:** The floor should be durable, waterproof and as non-slip as possible. Textured terrazzo, concrete and ceramic tile are the best choices.

•**Kitchens:** Either resilient flooring (linoleum, rubber) or hard flooring (terrazzo, concrete or tile). Resilient flooring is easier on the legs if workers will be standing on it for long periods. "With hard flooring, anti-fatigue mats may be needed to reduce the impact of the hardness on employees who stand for long periods," the guide states.

## NOTABLE

**1** Number of times a week school maintenance workers should wet mop resilient floors in a facility.

*Source: Collaborative for High Performance Schools* Best Practices Manual Volume IV-Maintenance & Operations

**80** Percentage of soil and debris trapped by a typical walkoff mat at a building entrance.

*Source: Carpet & Rug Institute, "Carpet Maintenance Guidelines"*

**To prevent spots and stains from permanently marring a carpet's appearance, maintenance workers should act immediately to treat or remove a stain.**

## Carpet cleaning

The Carpet & Rug Institute says that an effective carpet maintenance program has five elements: soil containment; vacuuming; a spot and spill removal system; interim cleaning; and restorative cleaning.

Its "Carpet Maintenance Guidelines" recommend outside and inside mats, which minimize the dirt and debris that people track into a building. The institute says outside mats should have a coarse texture that enables people to brush soil from their shoes; the mats should be able to hold large amounts of soil. Inside mats should be waterproof to prevent moisture from soaking into the indoor carpet.

The institute says that an inside mat of 6 to 15 feet will collect 80 percent of the soil and moisture entering the building on peoples' shoes. Such protective mats also are beneficial around food stations, water coolers, elevators and stair thresholds.

Vacuuming is a fundamental part of carpet maintenance, and it's important to use your vacuuming resources efficiently.

"The most important features of your vacuuming maintenance program will be identifying high-, medium- and low-traffic areas by continually monitoring carpet performance and making any necessary adjustments to the schedule," the institute's guide says.

The guide suggests categorizing areas of a building based on the amount of traffic they receive: high, moderate or light. High-traffic areas (entrances, hallways, break rooms, cafeterias, corridors, elevator lobbies, stairways, main aisles, waiting areas) should be vacuumed daily, or more often if necessary. Moderate-traffic areas (research areas, conference rooms, classrooms, atriums, secondary aisles) should be vacuumed at

least two or three times a week. Light-traffic areas (offices, cubicles, storage rooms, executive areas) should be vacuumed at least once or twice a week.

## On the spot

To prevent spots and stains from permanently marring a carpet's appearance, maintenance workers should act immediately to treat or remove a stain. "The longer the delay, the higher the probability a spill will become a permanent stain," the institute's guide says.

Workers should use a rounded spoon and vacuum to scrape up solids or semi-solids that could cause stains. Liquid stains should be blotted with a dry, white absorbent cloth or paper towel. Do not scrub the area, the guide warns. If a stain is present, it should be treated first with water. When water does not remove a stain, the guide recommends consulting a spot-removal chart. (The institute's Spot Solver database is at www.carpet-rug.org/commercial-customers/cleaning-and-maintenance/spot-solver.cfm.)

The final element of a carpet maintenance program is restorative cleaning. This should be done before dirt is easily visible. The steps in restorative cleaning are dry soil removal, soil suspension (using chemical action, heat, agitation and time), soil extraction, pile setting (with a carpet brush or comb) and drying. The guide estimates that after restorative cleaning, a carpet will dry in six to eight hours. In humid conditions, the drying could take a few more hours. Good ventilation, commercial air movers and dehumidifiers can accelerate the drying.

## Mopping up

For keeping hard floors clean, vacuums sometimes are used, but the more common tool for daily cleaning is a broom or dust mop. The Collaborative for High Performance Schools (CHPS) *Best Practices Manual Volume IV-Maintenance & Operations* says that an effective maintenance program for resilient flooring should include a daily regimen of sweeping, dust mopping or vacuuming. Dust mops should be made of microfiber materials and properly treated to capture dust.

As with carpeted areas, walkoff mats should be used at entrances and other high-traffic areas to remove dirt on shoes before it reaches a building's hard floors.

In addition, hard floors should be cleaned with a wet mop at least once a week. Depending on the color of the floor, type of soil being tracked in, and the function of the area in question, a floor may have to be wet mopped more frequently. Maintenance work-

Knight-Celotex SoundStop® Tackable Wall Panels

Your classroom never has to be out of style when you install SoundStop® Tackable Wall Panels. The self-healing, tackable surface lets you change your décor to keep up with the latest trends in education. And SoundStop® Tackable Wall Panels are easy to install and contain no added formaldehyde, making them the perfect solution for your classroom.

800-375-0289
www.knightcelotex.com

U.S. Green Building Council Member
Green Building Initiative Supporter
Celotex™ Knight-Celotex Fiberboard a Knight Company
Innovations in Fiber Technology®

Circle 112 for more information ■ freeproductinfo.net/asu

ers should mop up any excess detergent and follow up with a clean water rinse to remove residues. Any excess water left behind could harm floor seals and adhesives, and cause a floor to deteriorate more quickly.

Buffing with a slow-speed buffer will remove scuff marks and light scratches. For harder-to-remove scuff marks, workers should use a nylon scouring pad, the manual says.

The furniture that presses down onto a floor can leave marks or gashes that shorten the life of a surface. The manual says that schools should use floor guards or casters to protect hard floors from chairs, desks, tables, and other furniture and equipment.

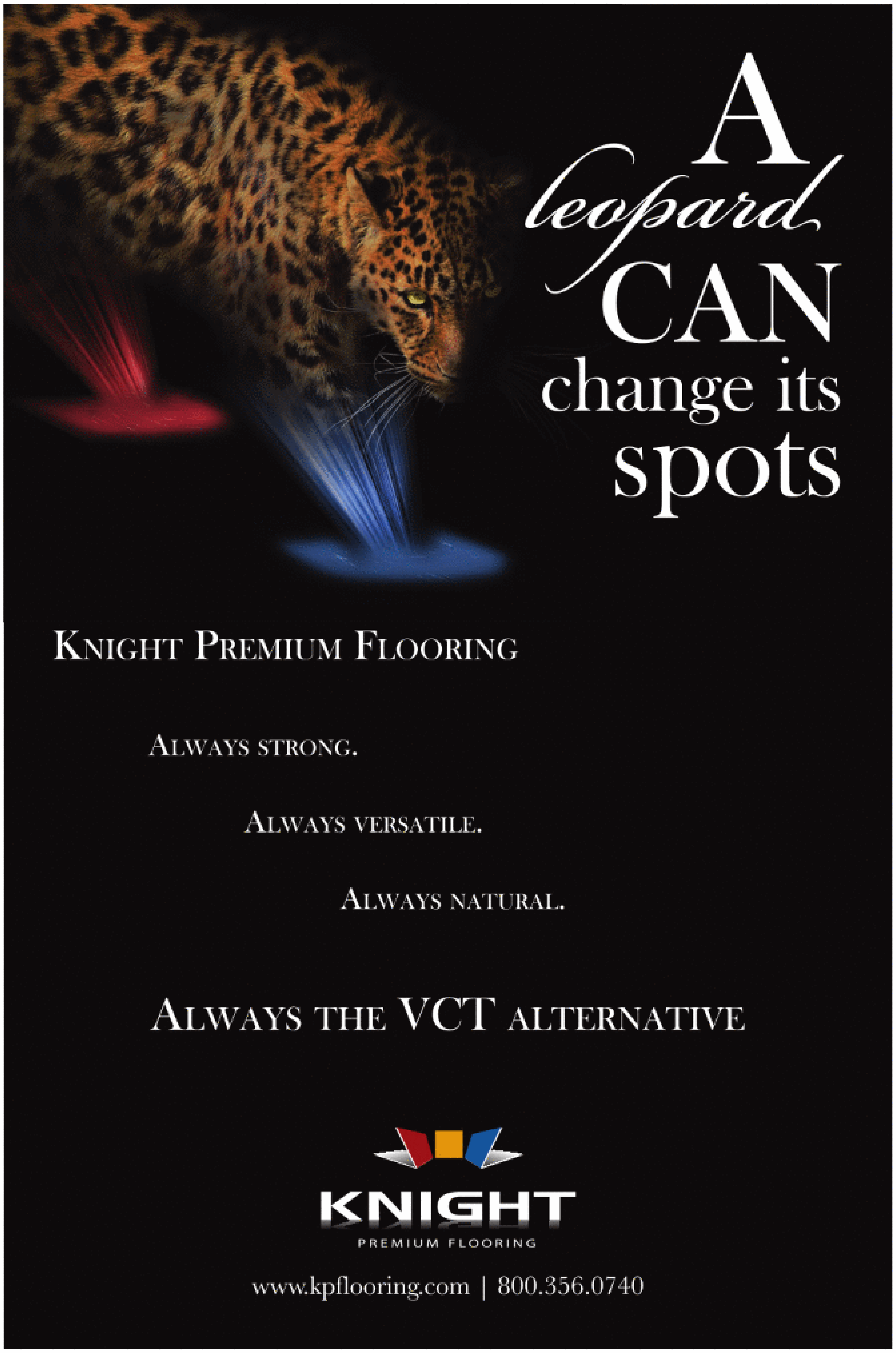
To restore shine to a hard floor, workers should apply floor finishes periodically. Before applying finish, the manual says, floors should be cleaned and dried; applying finish onto a dirty floor will trap the dirt under the finish.

The manual recommends that education institutions use a high-quality floor finish with a high solids content; it can be applied easily and provide good buffing results. "Apply finish to the floor by mopping in one direction to ensure a thin, even coat on the floor," the guide says.

**Schools should use floor guards or casters to protect hard floors from chairs, desks, tables, and other furniture and equipment.**

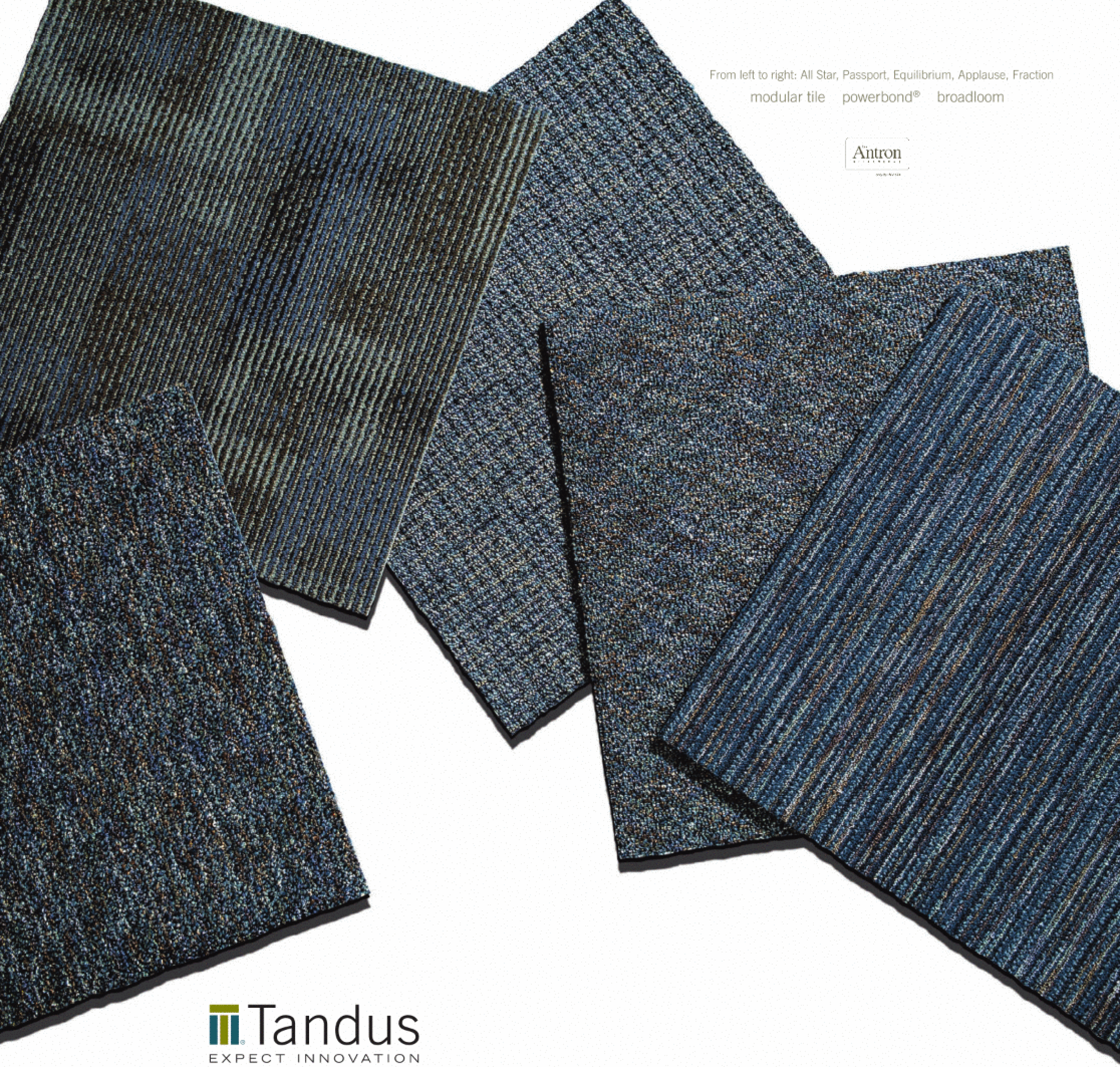
Workers should never use the same equipment, mops or buckets for applying finish as they have used for removing it. Even small traces of stripper will prevent the new finish from adhering properly. The guide suggests that the cleaning staff use a color-code system to mark its equipment to make sure the right implements are being used.

The CHPS recommends that schools choose more durable finishes to reduce the need for additional buffing, restoring and recoating. It also suggests finishes with non-metal polymer formulas, which can be removed with less hazardous floor strippers. ■



Circle 113 for more information ■ freeproductinfo.net/asu

*Kennedy, staff writer, can be reached at mkennedy@asumag.com.*




Tandus
EXPECT INNOVATION

no one else puts [ design technology sustainability ] inunison

At Tandus, we develop "products with a purpose", floorcoverings specifically designed to deliver solutions. We believe everyone has a part to play in making schools a better place to learn. With products that work inunison, across brands, designs and constructions, Tandus products inspire imaginations and help create an environment that is healthy and safe for our students to laugh, learn and grow.

For more information on products specifically designed for education facilities call 800.248.2878.

tandus.com/healthcare 800.248.2878

MONTEREY C&A CROSSLEY

**Circle 114 for more information ■ freeproductinfo.net/asu**

South Texas College, McAllen, is implementing the latest communications and technology resources at its five campus locations across Hidalgo and Starr counties to ensure that it is prepared for a crisis.

# Planning for Battle

## The "fog" generated during a campus emergency can be diminished through careful planning and sound management.

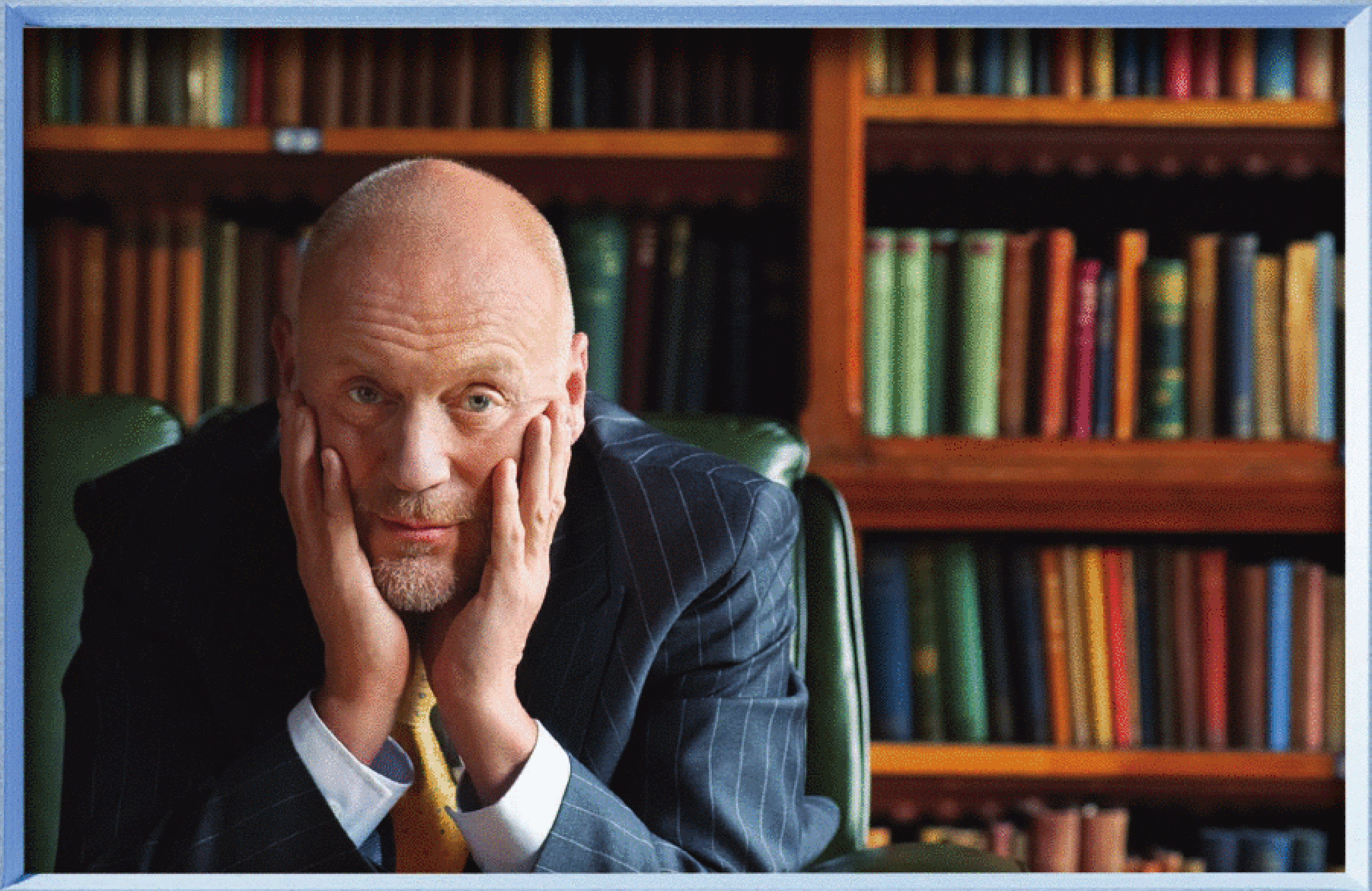
**By David Plummer and Wallace Johnson**

The concept of "the fog of war" brings to mind the chaos of smoke-covered battlefields, along with the randomness inherent in any rapidly developing situation. The term is used most often to illustrate the difficulty military commanders have getting accurate information while a battle is being fought. Sketchy and often inaccurate information obtained through the confusion of battle can lead to decisions based on imperfect information.

These conditions may be similar to the stresses administrators experience during crises on their campuses. They strain to get an accurate picture of what has just occurred so they can make the best decision about safeguarding students, faculty and staff.

CONTINUED...

# YOU NEED TO DO SOMETHING. THAT DOESN'T MEAN YOU SHOULD DO JUST ANYTHING.



*Today more than ever, schools throughout North America know they need to address security and life-safety concerns. But how? Many campuses are turning to SimplexGrinnell. Our think-before-you-act approach starts with a thorough assessment of potential risks and the existing life-safety infrastructure. Then we move to strengthen overall protection and preparedness with a comprehensive, cost-effective life-safety solution that encompasses fire alarm, security, mass notification, emergency communications, sprinkler and other critical systems. Find out how SimplexGrinnell is helping schools do the "right" things, call 1-877-590-SAFE for our free Be Safe Campus Guide.*

**SimplexGrinnell** BE SAFE.

www.simplexgrinnell.com

©2007 SimplexGrinnell LP

SimplexGrinnell and Be Safe are trademarks of Tyco International Services AG or its affiliates or subsidiaries.

**Circle 115 for more information ■ freeproductinfo.net/asu**

An ideal solution would alleviate the "fog of war" and allow administrators to share information with a push of a button. New technologies may help, but no single method will alleviate all issues pertaining to imperfect information in a crisis.

## Identify constituencies

School and university administrators first must determine the groups with whom they will be interacting during a crisis and the best means to communicate with these groups.

Much like military commanders, they must use multiple methods to develop a multi-channel emergency notification system (ENS) that will enable information-sharing during and after a crisis with the affected groups.

Administrators will need to contact students, faculty and staff during a crisis. However, communicating with these groups can be complicated; when a crisis occurs, some may be on campus and some may be elsewhere. Schools and universities also are likely to have contractors, vendors or community members on campus. All those on a campus will have their own preferences about how they would like to receive emergency communications.

Leaders must determine the timeframe needed to get in touch with their constituencies. Some groups will need to be notified immediately; others may have longer time windows, from one hour to several days. For instance, in the case of an active shooter on campus, communicating immediately with all constituencies is vital. A natural disaster like a hurricane that is several days away has a longer time window for emergency communication. In these types of emergencies, a message received a day or two after being sent still is effective.

## Take your pick

Decisionmakers also must determine where people will be and the methods, high- and low-tech, that can be used to communicate with them. Currently, text messaging seems to be the most popular method referred to when discussing an ENS. Text messaging can reach large numbers of people quickly, but it may not be the best method for every communication need. Obtaining accurate mobile phone numbers for every faculty and staff member and student can be difficult. Administrators should evaluate the effectiveness of other communication methods such as e-mail and voicemail. Even low-tech methods, such as posting flyers on bulletin boards, should be explored.

> **Leaders must determine the timeframe needed to get in touch with their constituencies.**

When deciding which kinds of systems to put into place, administrators need to consider the varying support requirements that each method requires. These requirements can range from relatively inexpensive methods such as making copies of flyers for people to post on campus, to high-end servers with fiber-optic backbones running throughout the campus. A cross-functional team should be involved in selecting the communication methods to ensure that a particular method is suitable. Campus security, information technology staff and administrators need to be on the same page when deciding to acquire a system—particularly for those that require more human and capital resources.

At a recent conference for IT professionals in higher education, one university described its purchase of hardware and software to be used to send text messages and phone calls to more than 50,000 faculty, staff and students in the event of a crisis. However, they selected the system without adequate cross-functional representation. When the university tested the system, administrators found that its phone system didn't have enough trunk lines to make all the outgoing calls, and the system failed. After the test, the university concluded that it needed to buy more equipment and add phone lines to meet the crisis requirements. Input from a broad-based emergency communications team could have helped campus officials recognize that the infrastructure could not support the system being considered. An alternative communication method using an off-site hosted solution might have been more feasible if the true cost of the system had been known.

Institutions also must consider whether to use in-house solutions during a crisis. If there is a power or network outage, can the ENS be used? An ENS is only as good as its backup systems, such as generators, uninterruptible power sources (UPS), and alternate data centers that allow continued usage during an on-campus crisis. Allowing for both in-house and hosted solutions creates the redundant systems that are vital for uninterrupted communications during and after a crisis.

## Procedures and guidelines

Even the best ENS will be ineffective without proper guidelines for using the system. Examining the circumstances surrounding the April 2007 campus massacre of students

**NOTABLE**

**160** Maximum number of characters that can be sent in a text message.

and staff members in Blacksburg, Va., the Virginia Tech Review Panel found that the university had an ENS that was capable of sending e-mail and phone messages. However, "the protocol for sending an emergency message in use on April 16 was cumbersome, untimely, and problematic when a decision was needed as soon as possible," according to the panel.

When developing ENS guidelines, it is just as important to determine the feasibility and timeliness of the protocol used to send an emergency message as it is on which ENS to use. Will it be possible to get approval from a top administrator or convene a crisis-management team to make decisions in a timely manner during a crisis? One of the keys to fighting through the fog is disseminating accurate, timely information so people can act quickly.

Procedures for most normal messages tend to be somewhat bureaucratic, often requiring approval from the public-relations office or even a superintendent or university president. For many types of crisis, the standard approval process for mass communication is not adequate for sending timely messages. One way to overcome bureaucratic and time constraints is to determine which threats are most likely to occur at a campus and develop pre-formatted, pre-approved messages that can be sent via e-mail, text message or voicemail through the ENS. At the end of these messages, campus planners should add a statement that additional information will be sent out when available. This allows for a quick response from those affected by a crisis.

Once a decision is made to launch a message using the ENS, protocols should be in place to determine who has system access to send the message. If too few people have the access and authority to send an emergency message, the institution runs the risk that no one will be available during a crisis to launch a warning. But if too many people have access, an unapproved or unwarranted message may be sent out.

Education institutions should develop procedures where key individuals have access to the system and can send out preapproved messages for certain identified situations, such as severe weather warnings or a shooting on campus. Other messages, such as campus closures or evacuations, require additional approval from key administrators or a designated crisis-management team. ■

*Plummer is chief project administrator for South Texas College (STC), McAllen, and is a certified Project Management Professional. Johnson has taught American government at the college for seven years, and is a former department chair and program coordinator at STC.*

**Circle 116 for more information ■ freeproductinfo.net/asu**

**When user volume is high in restrooms, it is important for education institutions to reduce water use.**

# Frugal Flow

## Plumbing systems engineered for high-use environments can reduce water use in restrooms.

**By Richard Nortier**

The plumbing products most appropriate for a high-end hotel or executive restroom will differ from those most suited for school and university restrooms, where large numbers of boisterous students may charge through the doors all day long. But installing plumbing that can stand up to rough-and-tough student use doesn't have to compromise efforts to save water.

In fact, two plumbing technologies, originally designed to solve problems common in high-use/high-abuse restrooms, also enable schools and universities to use water more efficiently. These plumbing technologies—high-use flush modes for urinal flushometers and monitored control systems—can be used in

conjunction with other plumbing products to substantially reduce restroom water use.

## High-use flush modes

The high-use flush mode is a built-in option on some electronic urinal flushometers. Its intention is to get the lines of men waiting for urinals to move more quickly when restroom traffic volume is high, especially in large facilities such as auditoriums and stadiums.

Sensor-operated urinal flushometers with high-use flush modes can be set to flush only at predetermined intervals, instead of after every single user, or to vary the water volume from flush to flush. Either way, these modes can reduce water usage. Urinals that already consume as little as 0.5 gallons per flush for regular operation can use much less water overall when equipped with a high-use flush mode feature.

High-use flush modes come in two basic types. The first, stadium flush, typically flushes once for about every five men in line. The second type is per-cycle reduced-volume flushing. This mode flushes after each user, but the water volume varies with each flush. It may flush with 0.3 gallons for several users in a row, followed by one full-volume, cleansing flush. Then the low-volume cycle restarts.

## Monitoring systems

In private restrooms, such as those restricted to staff members or administrators, users typically will be more conscientious about treating restrooms properly. Technologies such as manual dual-flush flushometers make sense in these restrooms; habitual users are more likely to learn how to use these water-efficient devices to their full potential.

Restrooms for students and the general public are a different story. Depending on the facility, these restroom users are more prone to vandalize or misuse plumbing, and they're more apathetic about or less familiar with their surroundings.

CONTINUED...

**NOTABLE**

**0.5** Total gallons of water used in one standard toilet flush.

FINALLY... A FAST HAND DRYER!

- Three Times Faster (10 to 15 Seconds)
- Uses 80% Less Energy Than Conventional Dryers
- 95% Cost Savings vs. Paper Towels
- Greenspec® Approved
- Helps Qualify for LEED® Credits
- Awarded GSA Contract

GSA Contract Holder #GS-07F-0017T

GreenSpec® LISTED

U.S. GREEN BUILDING COUNCIL LEED USGBC

THE XLERATOR

INDUSTRY THE NEW STANDARD
MADE IN USA

EXCEL
TIME TO THROW IN THE TOWEL

EXCEL DRYER Inc.
Tel: 1.800.255.9235
Email: sales@exceldryer.com
Web: www.exceldryer.com

Circle 117 for more information ■ freeproductinfo.net/asu

In these restrooms, where facility managers can't count on user cooperation, plumbing products and systems that are automatically set to use water more efficiently are the best bet. Sensor-operated, low-consumption flushometers and faucets with 0.5 gallon-per-minute sprayheads are suited especially for high-use restrooms. These water-efficient plumbing products automatically regulate water flow. Plus, there's less chance of breakage that results because users are not turning knobs or pushing handles.

Another technology that some schools are turning to is monitored plumbing-control systems, which better manage plumbing products and water usage. These automated plumbing systems, which keep tabs on and control any or all plumbing components, traditionally have been deployed in prisons and other facilities where security is a priority. If the software-based system shows that one flushometer is being flushed continuously, the administrator immediately can deactivate only that flushometer.

The system also enables preset parameters: Administrators can program the system to automatically lock out additional flushes, for example, after two flushes in a row, or to allow water to flow to showers during limited hours. This type of control keeps users from abusing plumbing products.

When administrators change which plumbing products can operate when, they are saving water—whether or not that's their main intention. Think about how much water would be wasted or the potential flooding that could occur if a single shower was left running over a weekend or if no one witnessed an unattended water closet that repeatedly flushed.

This type of control system has wide-reaching uses in education settings. Remote monitoring and control of one or all sinks, water closets, urinals and showers in a facility make it easy to turn water flow on and off to plumbing products when students pull pranks that could damage plumbing or when they attempt to flush contraband. These controls also help with scheduled or emergency maintenance, or for regulating plumbing in seasonal facilities, such as fieldhouses and residence halls.

Because monitored systems provide views of when and how long each system-connected sink, water closet, urinal or shower is used, they also offer administrators valuable usage information that relates directly to water efficiency. Using these system views, administrators could calculate how much water certain plumbing products use or determine traffic patterns in different sections of a building.

Administrators then would have solid data to make the case for investing in more water-efficient plumbing or to take other water-saving steps. ■

*Nortier is marketing research manager for Sloan Valve Company, Franklin Park, Ill.*

## To flush or not to flush

A recent study compared two high-use flush modes to determine which uses water more efficiently. Results showed that stadium flush uses much less water than reduced-volume flushing when there's a long queue. In fact, the longer the queue, the more water a stadium flush mode will save.

For a queue of 15 users, the reduced-volume flush mode typically would have a 0.5-gpf flush after users 1, 10 and 15; after all other users, there would be a 0.3-gpf flush. The stadium flush mode, on the other hand, would trigger a 0.5-gpf flush after users 5, 10 and 15; there would be no flush after all other users until the queue ended.

The results: The stadium flush mode serving 15 men would use only 1.5 gallons of water, compared to 5.1 gallons total for the reduced-volume flush mode.

Both high-use modes, however, are improvements over a regular flush mode of 0.5 gpf after every user, which totals 7.5 gallons of water for a queue of 15 users. The stadium flush mode would be 80 percent more water efficient than the regular flush mode, and the reduced-volume flush mode would be 32 percent more efficient. The savings would grow even more with new urinal flush valves using only 1 pint of water.

## Total gallons used by urinals for a queue of 15 men, by flush mode

| USER # IN LINE | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | TOTAL GALLONS USED |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stadium flush | | | | | 0.5 | | | | | 0.5 | | | | | 0.5 | 1.5 |
| Reduced-volume flush | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.5 | 0.3 | 0.3 | 0.3 | 0.3 | 0.5 | 5.1 |
| Standard flush | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 7.5 |

*Gallons used based on standard urinal flush volume of 0.5 gpf. Source: Sloan Valve Company

ecoeffects™

At Roppe, we've consciously chosen to be part of the solution.

That means we're not just committed to making better products – we're dedicated to making a positive impact on the environment as well. Our "green" products meet high environmental standards and can contribute to the U.S. Green Building Council's LEED® Green Building Certification System without compromising stock availability, performance, durability or style.

ROPPE.
Proven. Flooring. Experiences.

1.800.537.9527 | roppe.com

**Circle 118 for more information ■ freeproductinfo.net/asu**

# GREEN schools & universities

*strategies to create sustainable, high-performance facilities*

Murrieta Mesa High School
Murrieta, Calif.

**Architect: NTD Architecture**

## INSIDE THIS SPECIAL SECTION:


- **Taking Initiative** p. 40
  Cost-effective ways to go green
- **Suck it Up** p. 44
  Cleaning's role in green buildings
- **Green Product Solutions** p. 48

ProTeam®
The Vacuum Company
A vital part of green cleaning programs
through improved indoor air quality.
www.pro-team.com • 800.541.1456
Circle 119 for more information ■ freeproductinfo.net/asu

# Taking Initiative

## Easy and effective ways education institutions can conserve natural resources.

By Ann Hamann

**Many education institutions are promoting social responsibility on campus by going green.**

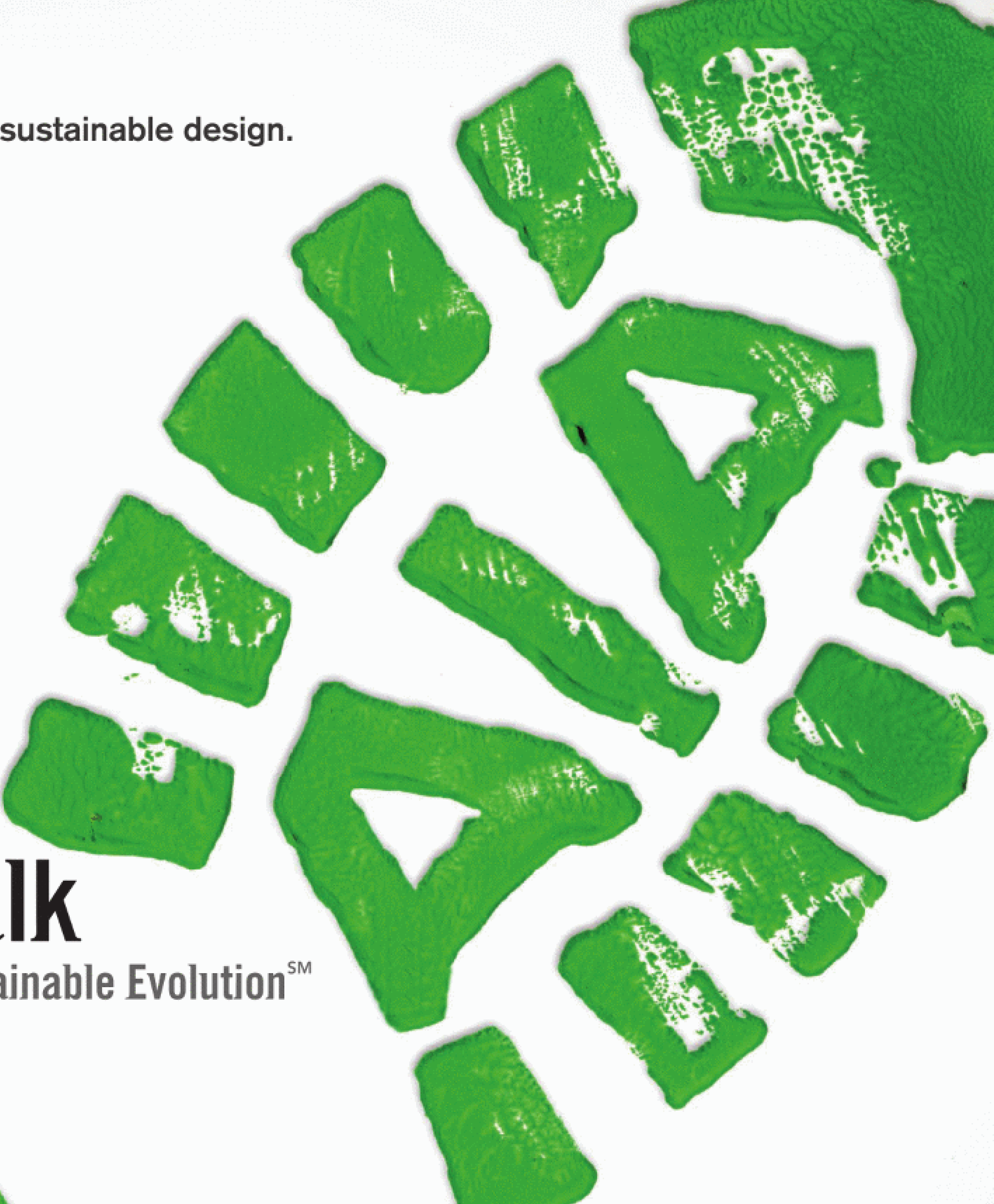
In today's classrooms, the three R's might refer to reduce, reuse and recycle. Schools are major consumers and producers of waste, and many are assuming responsibility for instilling environmental values and practices in their students—the next generation of leaders—and serving as role models for their communities.

At universities and K-12 facilities, a tremendous movement is underway to create eco-friendly environments. Facility managers and school administrators are looking for innovative approaches to make a difference—easily, effectively and affordably. Administrators are using

We've all learned a lot about the effects of climate change lately. AIA Architects have learned that sustainable design solutions can positively impact a buildings effect, not only in the environment, but on the well-being of its occupants as well. That's why bringing an AIA Architect onto your team early in the process is critical.

AIA Architects are committed to decreasing the overall footprint of buildings, reducing emissions, energy usage, and resource dependence while increasing indoor air quality. It's a walk that helps not only our well-being, but the well-being of our planet as well. Together we can learn our way to a more sustainable future.

**AIA Architects walk the walk on sustainable design.**




# Walk the Walk

## Architects Leading the Sustainable Evolution℠

THE AMERICAN INSTITUTE OF ARCHITECTS

Join us and together we can walk towards a more sustainable future, visit

www.aia.org/walkthewalk

**Circle 120 for more information ■ freeproductinfo.net/asu**

environmentally friendly technologies such as resource scheduling applications that deliver environmental benefits and enable education institutions to save money.

Because of increasing interest from students, parents, teachers and surrounding communities, schools and universities are adopting green initiatives. One major effort is the Go Green Initiative, which promotes social responsibility on campuses by minimizing energy consumption and paper usage, and promoting recycling, carpooling and electronic communications. More than 1 million students and teachers in 37 states, as well as Europe and Africa, are participating in Go Green. Harvard University and other colleges are creating their own Green Campus Initiatives to reduce their carbon footprint.

Economics is a key source of motivation in reducing energy consumption. According to a report by APPA, which serves education facilities professionals, "Utility costs make up a significant portion of campus operating budgets, running $1.50 to $2.00 per square foot on average. Most campuses manage millions of square feet, so even incremental savings can have a significant effect on the bottom line. Calls for improved energy resource management arise out of several long-term trends, including financial constraints, competition, student expectations, and accountability."

## Strategic approaches

Some environmentally conscious efforts, such as creating green buildings, can be costly and require a major commitment of time and resources. These programs can be beneficial and save money in the long run, but many institutions don't have the capital to undertake these major projects. But schools and universities can move the green agenda forward with less expensive approaches, such as better use of resources through effective scheduling of shared workspace, resources and assets.

The APPA report identified the critical issues facilities face as resource scarcity and affordability, and recognized that "budgets for universities will remain tight for the near future." As a result, the group identified two ways to address this issue: "develop strategic management solutions to do more with less" and "develop energy-efficiency strategies that will reduce utility costs and benefit the environment."

For many schools and campuses, it makes sense to begin with smaller, more manageable eco-friendly initiatives. Following are easy and affordable ways education institutions can move their green initiatives forward:

**•Don't use energy you don't need.** Establish an automatic solution for maintaining room temperature. Energy consumption has become a tremendous drain on natural resources. According to the U.S. Department of Energy, Energy Efficiency and Renewable Energy: "HVAC accounts for 40 percent to 60 percent of the energy used in U.S. commercial and residential buildings. This represents an opportunity for energy savings using proven technologies and design concepts."

Consider the energy waste of heating or cooling rooms that may only be in use sporadically. Universities can use sophisticated resource scheduling technology that integrates with their HVAC systems to automatically adjust the temperature of a room depending on its use. This helps conserve fuel consumption and reduces emissions that typical air conditioning and heating systems emit.

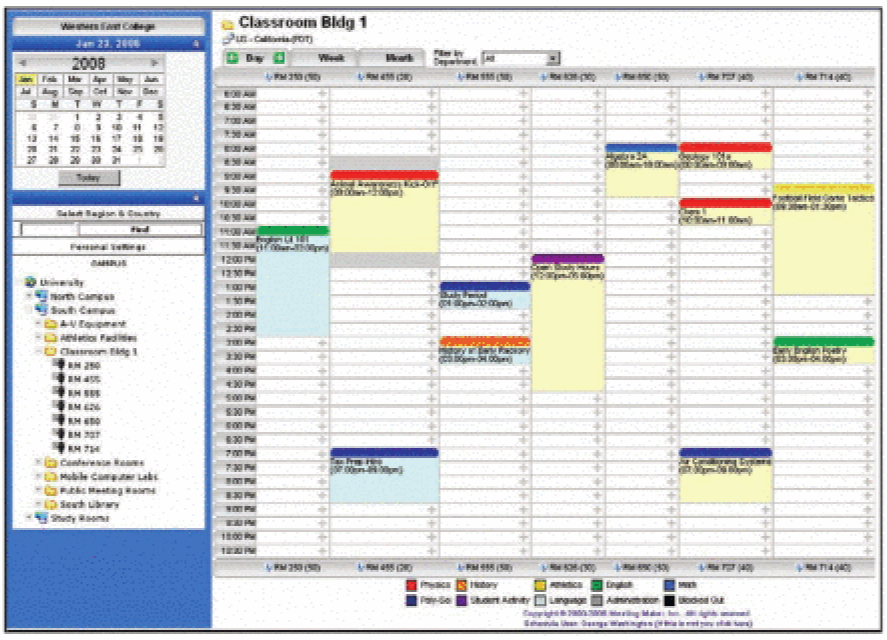
"SUNY Buffalo was able to prove that each degree of overheating or overcooling in campus buildings resulted in $100,000 per year in excess energy use," according to the APPA report.

**•Track and better utilize resources.** By tracking and managing the use of resources and assets, such as audiovisual equipment, schools and universities can use them more efficiently and avoid buying unnecessary items. Similarly, schools can avoid waste by tracking and better utilizing vehicle usage. Rather than using a van or bus to transport one or two people, a school can find a car for the same job. The same concept applies to maintenance. A current practice at some facilities is to change light bulbs and HVAC filters on a regular basis, but by tracking room utilization using an integrated resource scheduling system, facility managers can reduce waste by changing light bulbs and filters only when needed.

**•Reduce paper waste.** According to a Worldwatch Institute report, "An average university with a campus population of 10,000 uses more than 1 million sheets of bond and letterhead paper each month." Facility managers should review manual-based processes within their schools and determine how they might replace them with electronic methods.

Districts and campuses

For many schools and campuses, it makes sense to begin with smaller, more manageable eco-friendly initiatives.




**Resource scheduling can deliver environmental benefits, such as reduced HVAC and energy usage.**

can reduce their impact on the environment by relying on electronic communications more heavily, such as using an automated system or portal to schedule and publicize meetings and share documents. By using technology to reserve rooms and other resources, universities significantly can reduce the paper typically used in manual scheduling books. Additionally, they can integrate scheduling information with electronic displays outside rooms, such as library study rooms, to avoid the need to post paper schedules.

Some school districts and campuses don't just schedule events and meetings electronically, they also publicize them and send out notices using automated systems. Some universities are creating portals and centralized repositories where everyone can access information and search all the activities and meetings within a department. Participants can sign up for notification on changes, as well as reminders.

It is no longer a choice, but a necessity, for schools and universities to undertake environmental initiatives. Administrators have many ways to create a green agenda, and they don't have to be costly or daunting. Finding better ways to use internal resources is a win-win solution for school districts and universities, enabling them to save money and conserve natural resources. ■

*Hamann is vice president, marketing, at PeopleCube, a Framingham-based company specializing in on-demand workplace and resource-management solutions.*

Imagine

A NEW TECHNOLOGY THAT COULD POWER A HANDWASHING FIXTURE WITHOUT ELECTRICITY OR BATTERIES. WHAT IF IT COULD BE ENVIRONMENTALLY FRIENDLY, COST EFFECTIVE AND VIRTUALLY MAINTENANCE FREE ALL AT THE SAME TIME?

**Introducing the ndite™ Light-Powered Handwashing Fixture.**

The patented **ndite technology** uses photovoltaic cells to convert light to energy. Energy that can power a Bradley Express Lavatory System. No batteries. No electrical hook-ups. Years of maintenance-free operation. Only Bradley brings this revolutionary technology to your washroom design.

ndite™

TO UPGRADE YOUR EXISTING EXPRESS LAVATORY SYSTEMS, ASK ABOUT OUR NDITE RETROFIT KITS

Bradley

FOR MORE INFORMATION ON THIS BREAK-THROUGH TECHNOLOGY, PLEASE VISIT OUR WEBSITE AT BRADLEYCORP.COM OR CALL 1-800-BRADLEY.

**Circle 121 for more information ■ freeproductinfo.net/asu**

# Suck it Up

## Schools and universities can use LEED as a guide to achieve cleaning and vacuuming goals.

By Dave Jansik

**Effective green cleaning practices are required for achieving any level of LEED certification.** Photo courtesy of Pro-Team

Benchmarks for cleanliness can be subjective. For instance, in a residence hall, how many students think that a room with a pile of clothes in a corner on the floor and dust bunnies under the unmade bunk bed is clean, as long as the posters are hung straight?

Now that LEED standards are gaining a foothold among facilities management and building professionals, there is a benchmark to strive for. And a high-quality vacuum is a key part of the equation.

### LEED means green

In 1993, the U.S. Green Building Council was created, and the construction industry took a giant step toward developing sustainable building standards. Builders wanted design and construction methods that took into account environmental, health, leadership, awareness and cost-savings issues. The result of their efforts is LEED (Leadership in Energy and Environmental Design), a nationally accepted benchmark and blueprint for building design, construc-

## The School Window Replacement Technology of Choice

Old classrooms can be transformed into exciting new places to learn. Balanced, glare-free daylighting with no need for curtains or shades. Superior energy performance, structural integrity, vandal-resistant and a maintenance-free life cycle with rapid payback. All installed while school is in session.

**Healthy daylighting… efficient, economical and green. LEED® participant. Now with U-values as low as .05 (R-20) with Kalwall+ Nanogel®!**

Since 1955
Kalwall®
*...Light-Years Ahead!*™

kalwall.com    daylightmodeling.com    skylightinfo.com

Kalwall Corporation, PO Box 237, Manchester, NH 03105 • **800-258-9777** (N. America)

**Circle 122 for more information ■ freeproductinfo.net/asu**

tion, renovation and ongoing maintenance.

This coincides with the exponential increase in green cleaning practices. With positive data rolling in from LEED-certified buildings worldwide, indoor environments are becoming more healthful and energy-efficient, and less costly to build and maintain.

A California study on LEED buildings shows observed improvements in worker productivity and morale—plus it's easier to recruit new employees to work in a clean-air building. In hospitals, patients were released 2.5 days earlier; in schools, student test scores improved significantly and absenteeism numbers decreased. The demand for green buildings can be seen in the growing number of sustainable-design architectural firms and green building product suppliers. The data show that these buildings are environmentally responsible, profitable and healthful places to live and work.

## Extra credit

LEED's Indoor Environmental Quality Green Cleaning Credit 3.7 covering sustainable cleaning equipment outlines specifications and initiatives to receive this credit:

•Establish a program for the use of janitorial equipment that reduces building contaminants and minimizes environmental impact.

•Vacuum cleaners should meet the requirements of the Carpet and Rug Institute (CRI) "Green Label" Testing Program and operate with a sound level less than 70dB.

•Use ergonomic power equipment designed to minimize vibration, noise and user fatigue.

•Keep a log for each type of housekeeping equipment, and document the purchase date, repair and maintenance activities, and vendor specification sheets.

> Vacuuming is one of the most important cleaning tasks for maintaining healthful IAQ, so facilities staff should be armed with the right machines.

## Point by point

LEED establishes voluntary performance standards and benchmarks for new construction (LEED-NC), for new school facilities (LEED for Schools) and for existing buildings (LEED-EB), among others. The point system for an environmentally friendly existing building falls into five categories: sustainable site planning, green cleaning and maintenance practices, indoor air quality (IAQ), water and energy efficiency, and system upgrades. Facilities can earn additional points through innovations not listed in LEED, but that still adhere to the overall goals of the program.

Certain base requirements need to be met for the IAQ portion of the program: controlling PCBs, removing sources of tobacco smoke and asbestos, and having a system for outside-air introduction and exhaust mechanisms. Depending on how many subsequent points are earned, a building can be certified as platinum, gold, silver or certified.

When considering IAQ, effective green cleaning practices now are required for achieving any level of LEED certification. Sustainable cleaning products and highly efficient tools must be used properly and consistently to prevent indoor pollutants from affecting the health of the building occupants. Caution: Anyone can call a product "green," but that doesn't necessarily make it the safest or best to earn LEED points. Other steps to take include isolating janitorial closets from the general public, using low-impact pest-management practices, conducting cleaning audits, and reducing or ultimately eliminating identifiable sources of indoor air pollutants.

## Meeting standards

Vacuuming is one of the most important cleaning tasks for maintaining healthful IAQ, so facilities staff should be armed with the right machines.

The first step is to find a vacuum that has been certified by the Carpet and Rug Institute for vacuum performance. This voluntary program rates vacuum performance on soil removal, dust containment levels (must not release more than 100 micrograms of particles per cubic meter of air, keeping dirt and dust locked tight in the vacuum), and carpet texture retention. Its label should appear on the vacuum and in the product literature.

Not all manufacturers can back up their particulate capture claims with hard data. If a company doesn't state its efficiency in what it captures, avoid buying it. There are vacuums on the market that capture 99.9 percent of pollutants 1 micron or larger—a standard that exceeds most cleaning standards, including CRI's.

Because LEED-EB re-

quires a high level of capture and containment of particulates, education institutions may want to consider a HEPA vacuum. Vacuums certified as "True HEPA" have been specially sealed and independently tested for leakage. These are designed mainly for asbestos cleanup, healthcare and clean-room settings. But a well-engineered HEPA machine is quite capable of excellent pollutant capture.

Look for a model with a strong motor that creates good static lift (around 100 inches) and 150 cubic feet per minute of airflow. If the manufacturer does not state that its HEPA vacuum captures 99.97 percent of particles 0.3 micron or more, then don't buy it.

Capture rates are important, but comfort and efficiency for cleaning staff also are critical. Two studies by the Ohio State University Department of Surgery Division of Orthopedics and the Battelle Memorial Institute determined that the ease of use and ergonomic design of backpack vacuums enabled workers to vacuum more than twice the area in half the time. This increase in productivity took less than half the energy and effort it would to clean the same area with an upright.

High-quality body construction is essential for a LEED vacuum. An upright with a beater bar and fabric bag housing the filter can be ill-equipped for effective dust capture. It tends to churn more dust into the air than better built machines. Look for a sturdy backpack or canister with a lifetime guarantee on molded body part replacement. Durability will save money and improve performance in the long run, especially on repairs, because daily vacuuming is required in high-traffic areas such as hallways, building entrances, classrooms and elevators.

LEED standards and guidelines have enabled schools and universities to create detailed cleaning programs with specific goals in mind—and with the right vacuum, certification can be an attainable goal. ■

*Jansik is a freelance writer focusing on the jan/san industry. He resides in Boise, Idaho.*

Capture rates are important, but comfort and efficiency for cleaning staff also are critical.

**WEB 101**

For more articles on how to go green at your school or university, sustainable design practices and planning for energy-efficiency, visit www.ASUmag.com/green.

Made from the highest quality recycled rubber and vibrant ColorMill® EPDM flecks, ECOsurfaces features 70 brilliant colors with custom design capabilities. It is designed to meet stringent criteria under the LEED® rating system, and meets or exceeds established Indoor Air Quality Standards. ECOsurfaces...a flooring solution as creative as it is green.

ECOsurfaces® COMMERCIAL FLOORING

For free samples and more information, visit www.ecosurfaces.com

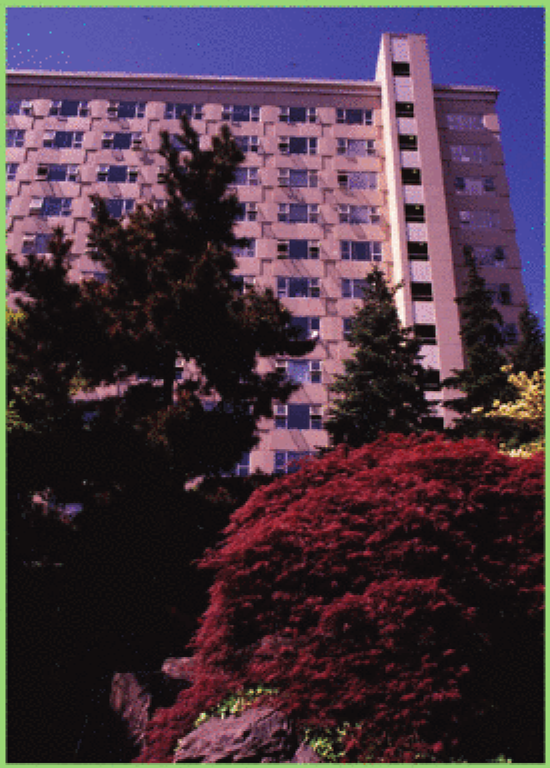
Made in the U.S.A. by: ecore

**Circle 123 for more information ■ freeproductinfo.net/asu**

## Soaking up savings

**Efficient showerheads help the environment and save university $87,000 annually**

**New Resources Group, Inc.** Seattle University teamed up with its public utility company and has become the first education institution in the region to reduce water and energy consumption by installing high-efficiency showerheads and faucet aerators in residence halls and academic buildings.



**Seattle University, Campion Residence Hall.** Photo courtesy of Anil Kapahi/Seattle University

About 360 efficient showerheads and 1,000 faucet aerators have been installed, reducing water consumption by 5.4 million gallons per year—enough water to fill the university's two swimming pools 34 times.

The high-performance showerheads also reduce energy consumption, because less water needs to be heated for showering. As a result, the university expects to save 351,648 kilowatt hours of electricity each year.

"By installing efficient showerheads, we are reducing our water and energy consumption, and saving money," says Michel George, associate vice president for facilities services. "The decrease in our utility bills lowers the costs of student housing rates and will also be used to fund other conservation projects to further improve Seattle University's ecological footprint."

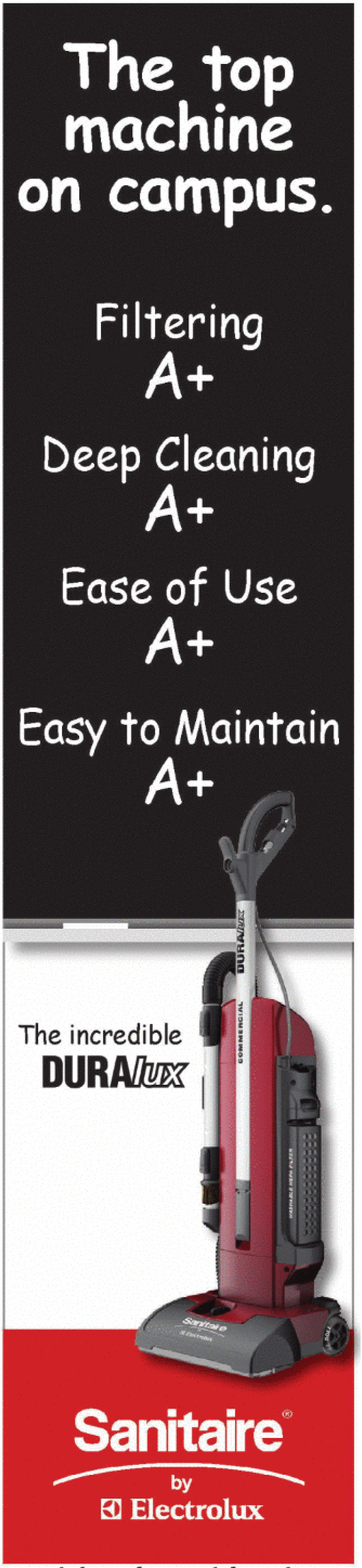
The university expects to save about $87,000 annually in water, sewer and electricity bills thanks to the new bathroom fixtures.

**Circle 253 for more information ■ freeproductinfo.net/asu**

## Floor preservation

**Armstrong Commercial Flooring**. The Linoleum collection from Armstrong now is offered with NATURECote, a durable top layer that increases resistance to scratches and scuffs, and helps maintain the floor's appearance at a low maintenance cost. The linoleum is made from such raw materials as natural linseed oil, cork and wood powder, limestone, organic pigments and jute. Because fewer chemicals and cleaning agents are needed, low-maintenance methods contribute to better indoor air quality. The reduced maintenance also helps reduce waste-treatment needs because fewer cleaning agents and less water need disposal.

**Circle 250 for more information**
**freeproductinfo.net/asu**

**Circle 124 for more information**
**freeproductinfo.net/asu**

## Energy efficient hand dryer

**Excel Dryer Inc.** The XLERATOR hand dryer dries hands completely in 10 to 15 seconds and uses 80 percent less energy than conventional dryers. It represents a 95 percent cost savings vs. paper towels and eliminates their maintenance while improving restroom hygiene. It also is GreenSpec-approved and helps education institutions qualify for LEED credits.

**Circle 251 for more information**
**freeproductinfo.net/asu**

## Recycling receptacles

**Rubbermaid Commercial Products.** Untouchable Containers and Lids provide hands-free, hygienic disposal of waste for more efficient recycling. The containers offer an integrated liner cinch for easy, one-step can liner retention that eliminates knot tying, improving productivity and reducing worker strain and labor costs. With the recycling label kits, compliance is easy with universal, color-coded symbol and word labels to help minimize stream contamination. ■

**Circle 252 for more information**
**freeproductinfo.net/asu**

**Circle 125 for more information ■ freeproductinfo.net/asu**

# A Helpful Roadmap

## LEED-EB is an ongoing tool for education institutions.

STEPHEN ASHKIN

Ashkin is executive director of the Green Cleaning Network, a 501(c)3 not-for-profit educational organization.
www.GreenCleaningNetwork.org
SteveAshkin@GreenCleaningNetwork.org

Often, when schools and universities think about the U.S. Green Building Council (USGBC) and its LEED Rating System, they think only about the flagship standard for New Construction (LEED-NC) or the new standard for school construction (LEED for Schools).

However, another important tool for schools and universities is LEED for Existing Buildings: Operations & Maintenance Rating System, or LEED-EB. This standard provides a roadmap to improve the operations and maintenance in all existing buildings, which are likely to have a much greater impact than a new construction project financially and environmentally.

LEED-EB is an excellent tool to help a school or university reduce its energy consumption, water consumption and solid-waste disposal—all of which save money.

The guidelines can lead to more efficient practices and create better spaces for learning, more marketability and other intangible benefits.

A recent revision of LEED-EB focused on a number of changes: making the rating system easier to use; reducing reporting requirements; and clarifying language.

Some specific changes are an increase in Energy Star requirements because of increasing concerns about the contribution that energy production has on climate change and an increase in the incentives (number of points) for water conservation.

Also, green cleaning is a prerequisite in the new version. This means that all buildings seeking LEED-EB certification must have a green cleaning policy.

Education institutions can earn up to two LEED points for conducting APPA's "custodial effectiveness audit," which for the first time will reward buildings that have superior cleaning programs.

Some other significant changes:

•Clarifying that green cleaning requires effective and systematic cleaning, as opposed to just switching to a few green products.

•Adding standards from Environmental Choice as an additional option to Green Seal for "certified" cleaning chemicals.

•Reorganizing the green cleaning credits into one section.

•Including language that requires the development of a strategy to encourage handwashing, including the use of alcohol-based hand sanitizers.

•Clarifying language on powered janitorial equipment, and adding some additional language for "certified" equipment, such as vacuums and carpet extractors.

•Adding language that allows janitorial paper products to be made from rapidly renewable resources (i.e. bamboo) or from tree-free fibers (i.e. straw or wheat grass), in addition to those made with recycled tree fibers.

The new LEED-EB will have lasting impacts at schools and universities across the country. ■

# Better Business for All

A revolution has started. An army of passionate paper people are helping businesses everywhere take back control of their kitchens, washrooms and workstations. Together they're using Tork® solutions to fight the good fight against grubbiness, napkin hoarding, style infractions, and the other culprits that chip away at the bottom-line of business.

Learn more from industry experts. Visit **torkrevolution.com** and click on White Papers.

# Design Mismatch

## Does enrollment fit the facility's design capacity?

JAMES E. RYDEEN

Rydeen, FAIA, is an architect/facility planning specialist and former president of Armstrong, Torseth, Skold & Rydeen, Inc. (ATS&R), Minneapolis. He can be reached at Jrydeen@atsr.com.

There often is a mismatch between the capacity of school buildings and the number of students in those buildings. Schools that exceed their design capacity experience increased wear and tear. And schools that are under-enrolled have to spend more in operations and maintenance than is necessary.

In trying to get student enrollment to fit a facility's capacity, administrators should remember:

•The building is a fixed item—capacity is determined by factors subject to change, such as use of a teaching station, building and occupancy codes, scheduling and curriculum.

•The initial design capacity can become outdated when programs and physical environments change.

•A classroom utilization study will reflect the building's functional capacity.

•Building capacity is best determined by reviewing the master schedule, tallying the number of students in each section, identifying unoccupied periods in each classroom, teacher-prep practices, and classroom uses for purposes other than instruction, such as a study hall or advisory session.

•Decreasing section sizes to increase individualized education decreases building capacity.

•Teaching stations have expanded beyond the typical academic classroom, science lab and gymnasium.

•Specialized learning is occurring off-site with magnet and work-training programs, alternative education and online courses.

Learning activities occur in a variety of spaces. Teaching stations used for art, music, shop or labs require more space and have larger or smaller section sizes than the average classroom. Programs such as special education or bilingual education reduce design capacity because fewer students are in a classroom.

The design capacities of many older secondary schools no longer are accurate because the buildings are being used differently. A six-period day with one open period would be considered 83 percent utilization. Block scheduling often leaves a room unoccupied for part of the day, which contributes to lower classroom utilization. Planners recommend a 75 to 85 percent utilization factor to determine the capacity using block scheduling.

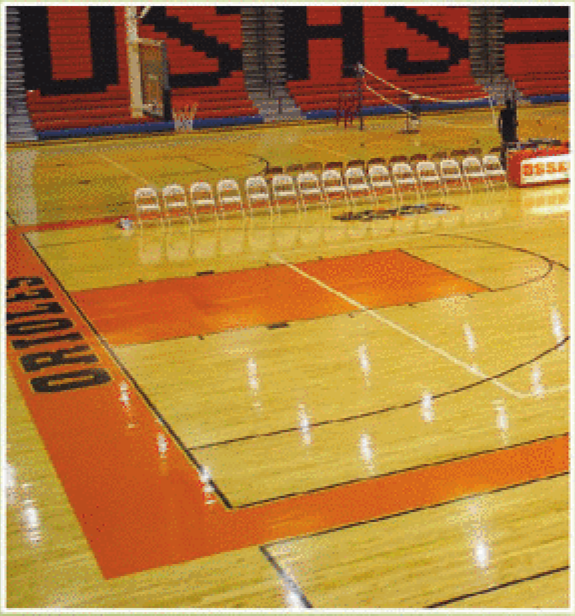
Expanding the curriculum decreases section sizes. For example, an advanced world-language class may have few students compared with a core subject class such as English.

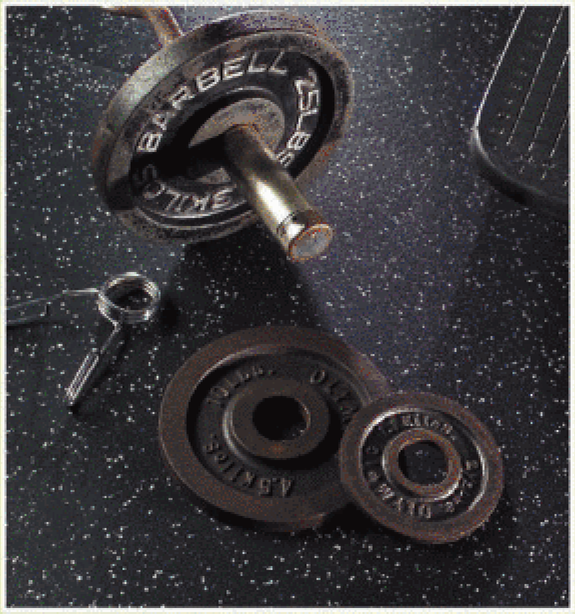
Fluctuations in school-age population affect building capacity. Some schools experiencing increasing enrollment exceed the design capacity by increasing section sizes rather than build additions to accommodate a short-term rise in student population.

Some education planners use a square-foot-per-student formula to calculate building capacity, but this method can be misleading because each institution is different. ■

# Action occurs in various forms.

[Like solid maple, synthetic polyurethane and recycled rubber — all environmentally friendly.]





Action Floor Systems is renowned as the manufacturer of America's best solid, hardwood maple sports floor systems, but we don't stop there. Our Herculan® floors are the only totally solvent-free synthetic polyurethane surfaces on the market. Featuring our exclusive water-based top coat, Action Herculan is easy to install (without masks) and does not require building evacuation during top coat application. It's a cost-effective, "green" solution for many facilities from school gyms to college field houses to multiuse areas. For weight or fitness rooms, Action ReFlex™ recycled rubber flooring offers a blade- and spike-resistant surface that's non-skid, high-impact and shock absorbent. Take Action — to receive a quote or to match a spec on your next project call 800.746.3512.

Serving the global marketplace.

Action FLOOR SYSTEMS LLC

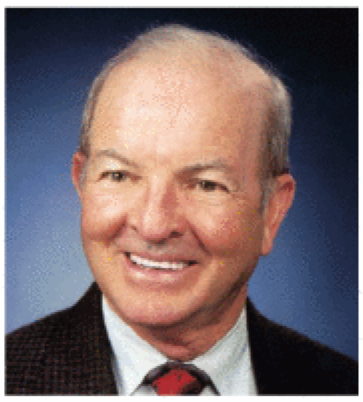
actionfloors.com
email: info@actionfloors.com
800.746.3512 • fax 715.476.3585

**Circle 127 for more information ■ freeproductinfo.net/asu**

# All Aboard

## Standardization can save operating costs.

C. WILLIAM DAY



Day is senior analyst at KBD Planning Group, Young Harris, Ga., a firm specialized in educational facilities and technology planning. He can be reached at bday@kbdplanning.com. www.kbdplanning.com

Technology has progressed to the point of disbelief in education. Almost anything you can imagine exists; therefore, standardization is key for any efficient education institution. With the variety of technology products in the school marketplace, IT staff members may find it almost impossible to service equipment after warranties have expired.

Once a warranty expires, it is up to a school district or university to maintain its systems. This means the maintenance and technical staff must learn new systems continually if they want to keep up. Now more than ever, administrators must take the reins of their technology and building systems by developing a set of standards that all facilities, architects and general contractors must follow. From networked data systems to security systems, district- or campus-wide standards ensure that the same type of technology is installed, and maintenance and technical staff can troubleshoot, maintain and provide parts for all systems.

Education institutions, if they haven't already, should develop minimum required standard specifications for hardware and software. These specifications can be used to maintain a standard approach and guide technology purchases based on a technology plan. Specification standards are an essential tool to maintain a clear, productive hardware/software system. They enable a school system to grow along with new, evolving technology. These standard requirements provide consistency and compatibility among all schools or campus facilities, faculty and administration. They allow technology to follow curriculum standards, and maintain a complete and consistent learning environment for all students. They also provide a basis for maintaining system operability and reliability.

Standardization appears to be the emerging model for education institutions, but don't forget that dependence on one vendor increases costs and creates the potential for orphaned systems should the vendor go out of business or choose to no longer support that system. When an education institution standardizes, its specifications must be detailed and inclusive.

For those educators who prefer their own brand of electronic whiteboard and projector and have grant money to spend, the policy is simple: If you buy a product not covered by the standard, then don't expect the school system to support it. Any grants that require exceptions to these guidelines should first be approved by the grants coordinator and the director of IT before acquiring any equipment.

It doesn't take long for everyone to march in step once the level of support is raised; stocking parts is a simple process when everything is the same. The bottom line: the most attractive benefit of standardization is the savings in operating costs. ■

## Stop an incident before it escalates. Get faster crisis response capability with police-approved LenSec IP video surveillance systems.

When a time-critical incident occurs, you need to let police and other emergency responders on the outside know the events taking place inside your schools. LenSec's IP video surveillance systems provide emergency personnel remote access to your camera system and the ability to view incidents occurring inside in real-time, enabling them to pinpoint urgent situations and determine the quickest entry points. All that is required is a computer with an internet connection. As the leading provider of IP video surveillance systems, LenSec can design a custom surveillance solution that matches your specific criteria, is easy to use, and requires no special software. Best of all, we can integrate our technology with your existing system and devices.

**Circle 128 for more information ■ freeproductinfo.net/asu**

Call us today and let us know how we can help your schools become more safe and secure at 1.800.348.4234 or email sales@lensec.com. Visit our website at www.lensec.com.

Campus-Wide

District-Wide

City-Wide


LENSEC
Enterprise-Wide Video Surveillance
10 YEARS
1998-2008

LenSec ■ 1800 Bering Drive Suite 751 Houston TX 77057 ■ 1.800.348.4234 ■ www.lensec.com

## No sound of music

**Temporary practice rooms ease transition of music program during renovation**

**Wenger.** While renovating and expanding the existing Ruth Taylor Music Building, Trinity University, San Antonio, temporarily installed nine modular, sound-isolating music practice rooms in the basement of the Parker Chapel building.

"Without our Wenger practice rooms, there would have been no music practice space available," says Ken Greene, professor of music. "It was a terrific boon to pre-install them."

About 70 students used the practice rooms regularly during the 18-month transition. Acoustical doors were furnished for several new built-in practice rooms.

"The acoustical doors are working out great," says Greene. "We're very impressed with their performance."

The university's practice organ is situated in a large built-in room that received extra sound insulation.

**Trinity University, San Antonio**

"You can watch someone playing the organ through the Wenger door and not hear a sound," says Greene. "But when you open the door, it's like a concert."

Greene says the other built-in rooms do not isolate sound as well as the Wenger rooms, in spite of their thick walls.

"They have some sound leakage from room to room, which you don't hear in a Wenger room," says Greene.

**Circle 303 for more information ■ freeproductinfo.net/asu**


NEW! The Next Generation in Green Cafeteria Tables!

**SICO GRADUATE w/BENCHES**

This low profile round table features extra long benches for increased seating capacity. Easy operation and compact storage profile.

**SICO COMMUNICATOR**

Roomy, yet compact 12-person capacity with generous 23" of spacing between each seat.

**SICO UNDERGRADUATE®***

A low-profile design featuring a one-piece tabletop that remains in the use position at all times. The stools, or benches easily fold up under the table.

* Patents pending.

Children & Schools GREENGUARD Indoor Air Quality Certified

Check out all of the SICO GREENGUARD® certified options at:

**www.sicoinc.com**

SICO America Inc. 800.742.6462

SICO


**Circle 129 for more information ■ freeproductinfo.net/asu**

# Self-adhering roof system

**The Garland Company, Inc.** The StressPly SA roof system provides adhesive properties, and tensile and tear strength while offering a cost-effective and environmentally friendly roofing solution. It incorporates asphalt adhesive technology to ensure excellent surface and seam adhesion. This self-contained system does not require open-flame torches, hot kettles or cold-applied solvents during installation, eliminating application-related fumes and noxious odors.

**Circle 300 for more information**
**freeproductinfo.net/asu**

# Network surveillance

**Dedicated Micros.** NetVu Console is a powerful NetVu Connected remote viewing station that offers installers and end users a non-PC-based alternative to remote viewing and pan-tilt-zoom (PTZ) control of cameras over the network. Designed to have minimal installation and training requirements, it consists of a traditional PTZ-style keyboard that is connected to the network and a local monitor to provide a remote viewing point on the surveillance system. It is ideal for installing extra control stations.

**Circle 301 for more information**
**freeproductinfo.net/asu**

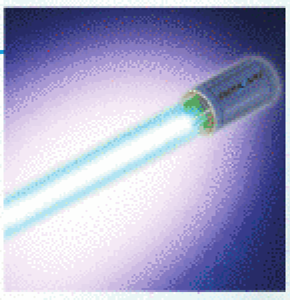
# Vacuum maintenance

**ProTeam.** The Thermal Protector device has been installed on ProTeam vacuums manufactured after Sept. 15, 2007, to guard against unexpected motor meltdowns. When a ProTeam vacuum motor begins to overheat because of a hose obstruction or an overfilled filter, the Thermal Protector will activate to automatically shut off the vacuum and protect it from long-term harm. A maintenance worker then can empty the filter or remove the clog, and the motor will cool down to a safe temperature for continued use in just a few minutes.

**Circle 302 for more information**
**freeproductinfo.net/asu**

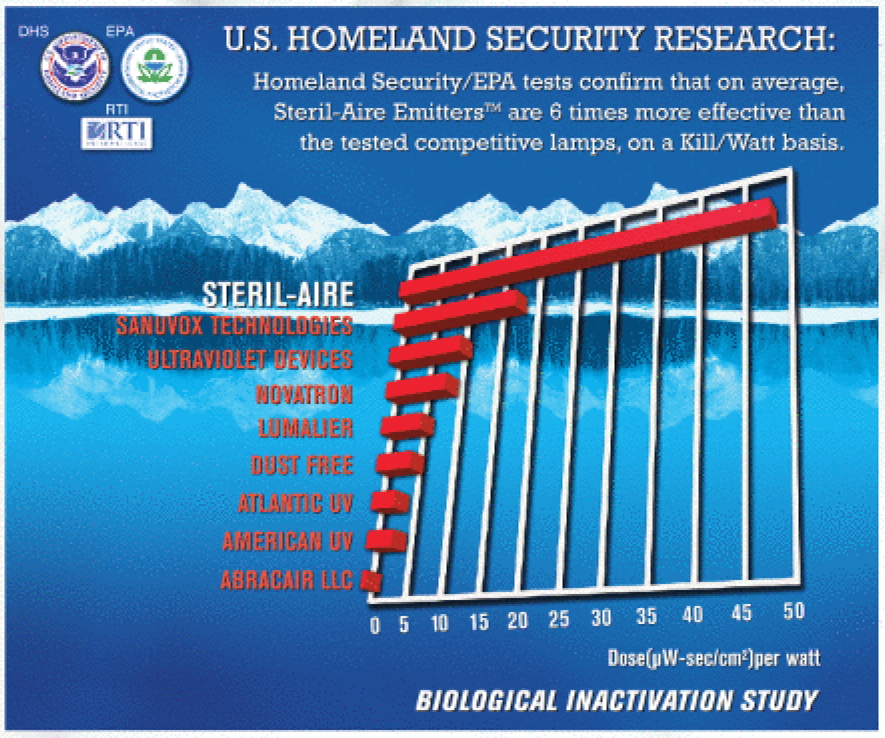
CONTINUED...


## UVC in school HVAC systems: *Good practice.*
## Steril-Aire UVC: *Best practice!*



**Multi-patented UVC Emitters™ deliver the....**

- **BEST PREVENTION:** Kills viruses and bacteria for enhanced infection control and reduced absenteeism.
- **BEST MOLD CONTROL:** Relieves allergy-asthma symptoms triggered by mold spores.
- **BEST SAVINGS:** 15% or more on energy costs… reduces or eliminates coil cleaning.
- **BEST PEACE OF MIND:** Reduces liability worries associated with mold and IAQ problems.
- **BEST ACCEPTANCE:** Backed by over a dozen patents, 10 industry awards, and top rankings in brand preference studies.
- **BEST OUTPUT:** 5 times higher UVC output verified by independent testing, for the longest life and best germicidal performance.




***BEST DOSE PER WATT:*** *The EPA has released test reports on several UVC devices. Data reduction in graph shows the relative dose per watt. Steril-Aire SE UVC Emitter also achieved 99.96% destruction in a single pass on airborne bacteria, 99% on viruses and 96% on spores.*

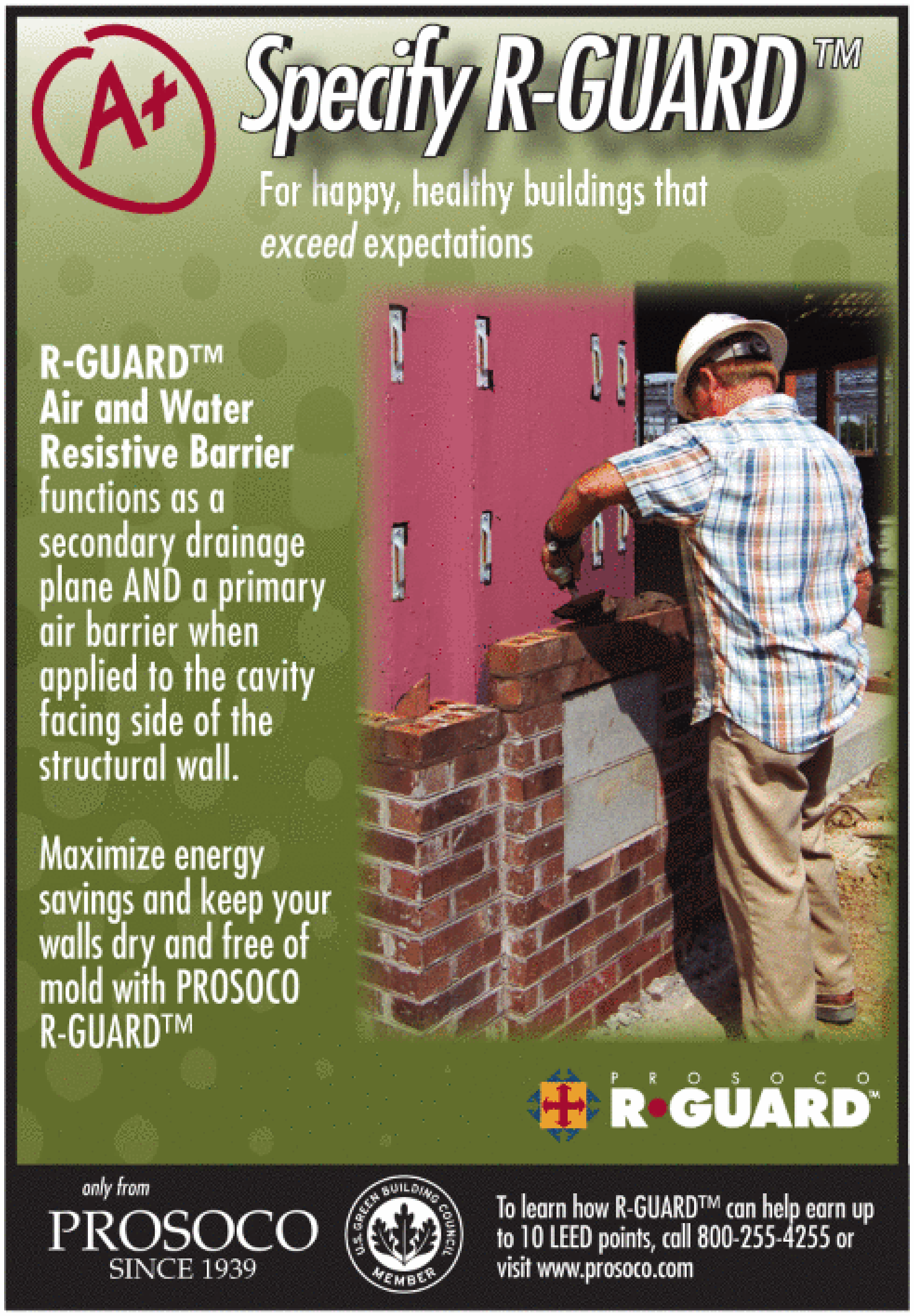
*Full reports at:* http://www.epa.gov/nhsrc/news/news062606.html

***First and Best in UVC for HVAC™***

STERIL-AIRE

**Steril-Aire, Inc.**
*Phone:* 800-2STERIL or 818-565-1128
*E-mail:* sales@steril-aire.com
*Web:* www.steril-aire.com

**Circle 131 for more information ■ freeproductinfo.net/asu**



Circle 132 for more information ■ freeproductinfo.net/asu

Circle 130 for more information ■ freeproductinfo.net/asu

## Roof replacement

**School finds aesthetic, cost-effective solution to replace leaky roof**

**Sarnafil.** Mount Vernon Middle School, Mount Vernon, Ohio, needed to replace its original standing-seam metal roof that had been failing since it was installed 10 years ago.

"There were concerns about the inside air quality and mold issues because of all the leaks in the roof," says Randy Bradford, director and facilities project manager. "It wasn't a very pretty 10 years."

After looking at options to replace the roof, Bradford selected the Décor system by Sarnafil because of its quality, cost efficiency and aesthetic appearance.

"I was very impressed with how the seams are hot-air welded," says Bradford. "I have some EPDM roofs that have glued seams, and they are giving me some problems. I was even thinking of going with a built-up roof until I saw how the Sarnafil membrane is welded together."

The result is an aesthetically pleasing roof that is easy to maintain because there are not many parts and pieces to remove if a repair is needed.

"We're very pleased with the roof," says Bradford. "I used to have 11 leaks with the old roof, and now I have zero leaks. It also looks great, and I'm impressed with how the color matches the existing roof."

**Circle 304 for more information freeproductinfo.net/asu**

**Mount Vernon Middle School, Mount Vernon, Ohio**

CONTINUED...

Tech Ed 2008
The Hands-On Conference

Technology in education
International Conference & Exposition

The Critical Time For PROFESSIONAL DEVELOPMENT IS NOW!

**April 13 – 16, 2008**
**Ontario Convention Center**
**Ontario, California**

**Register Today!**

Official Hosts:
DeVry University
SANTA ANA COLLEGE
RIVERSIDE UNIFIED SCHOOL DISTRICT

# Realizing the Vision

*__TechEd 2008__ is the world's leading Hands-On Technology in Education Conference and Exposition.*

*__Participants agree:__ each year TechEd grows and is more and more exciting! TechEd 2008 will definitely be our best ever with 100's of concurrent sessions focusing on issues related to Technology in the Learning Environment including __Virtual Learning, Administrative Technologies, Digital Media, Equity & Accessibility, Integrating Instructional Technology, New & Emerging Technologies__ and many more great tracks!*

*__But that's not all!__ 100's of leading technology industry experts will line the Exhibit Hall eager to share your problems, discover innovative solutions, and gain new insights into where technology will take the campus, and how you can embrace and manage the change.*

***New Attractions for 2008!***

- *TechEd Green Education Pavilion*
- *TechEd Gaming & Simulation Pavilion*
- *Napa Valley's Green School Bus*
- *Classroom of the Now Returns Bigger & Better!*
- *California Fuel Cell Partnership*
- *And So Much More!*

**Go Green with TechEd 2008!**
*Learn about our Green Pavilion and become a TechEd Blogger at*
**TechEdEvents.org**

***Featured Keynotes:***

**Tom Vander Ark**
***President, X Prize Foundation***
***Former Director of Educational Giving, Gates Foundation***

**Bernard Percy**
***Author, Educator & Communicator and Director of Community College Programs, Green-Technology.org***

*A Program of*
THE COMMUNITY COLLEGE FOUNDATION
*Serving Education & Community*

## Register Online Today!
## TechEdEvents.org
**For More Information Call 916.418.5134**

*Check TechEdEvents.org for updated program information.*

## Who Should Attend?

- Educators
- Supervisors
- Administrators
- IT Managers
- School Board Members
- Trustees
- Technology Coordinators
- Community Leaders
- Instructional Technology Specialists
- District Superintendents
- College Presidents
- All University Faculty
- All K - 12 Faculty
- All Community College Faculty
- Anyone Interested in the Future of Education!

**Education • Inspiration • Action**

## Server management

### Automated hardware and software management helps university keep IT headcount low

University of Miami

**Configuresoft.** The University of Miami, with more than 15,000 students and 9,400 faculty and staff on three campuses, is a prominent research university. Its IT infrastructure must be as innovative as the university itself.

To remain progressive, the university has expanded its network of servers by 50 percent annually each of the past few years. The IT department once relied on homegrown tools to track changes. With a mostly manual process, managing change and reporting on activities were inefficient and error-prone. It took days to create reports or review event logs.

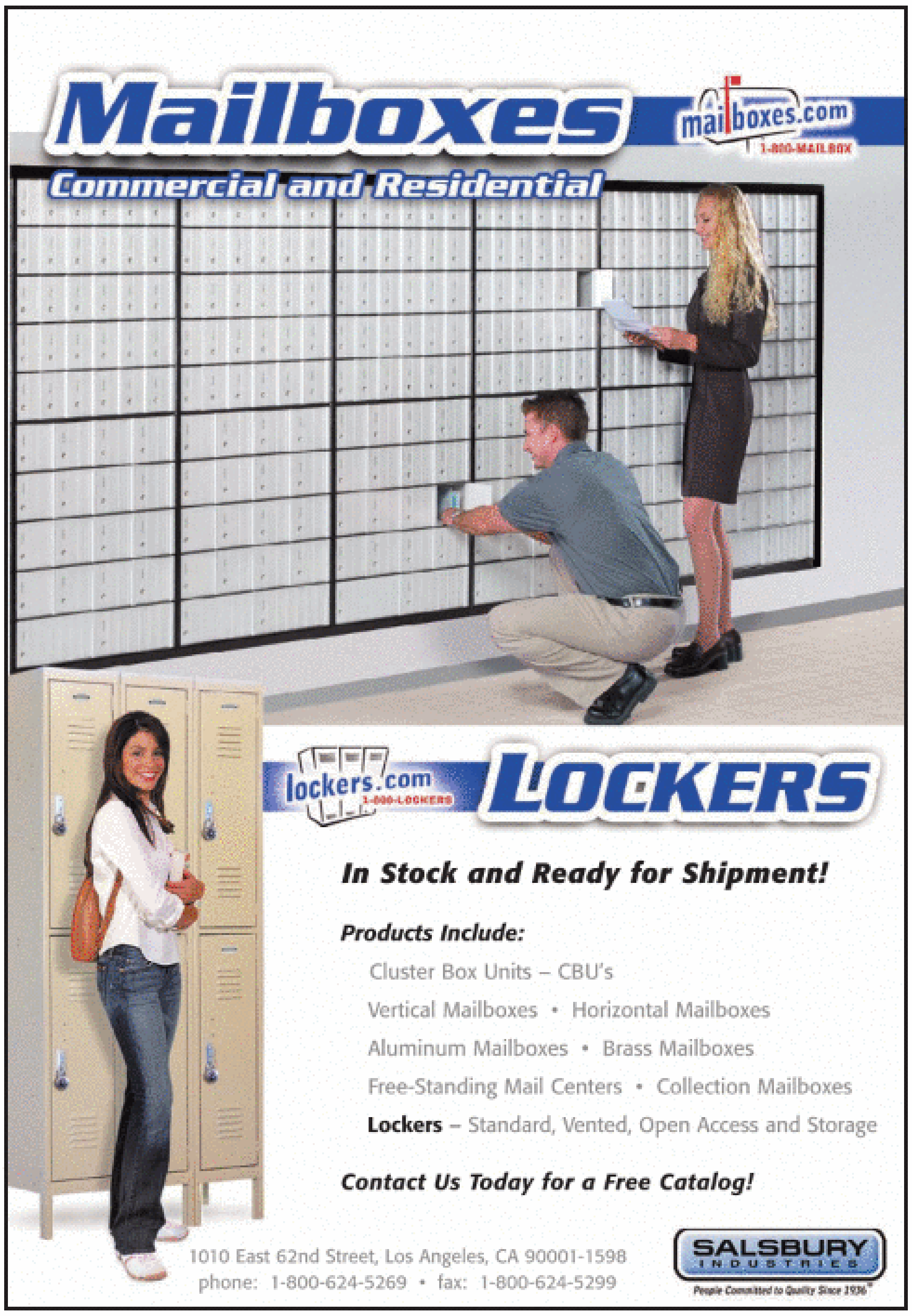
"Change can happen so rapidly and just kind of snowball," says Ismael Pimienta, manager of end user support, information technology. "We realized there just were not enough people to oversee it, so we had to implement a tool that would allow us to keep an eye on everything and not involve staff for every situation."

The university purchased Enterprise Configuration Manager (ECM) from Configuresoft. Initially, it deployed ECM across all servers in about half a day, and it links in new hardware easily as it's added. Today, the university's infrastructure of servers has grown to 210, all monitored by ECM.

Based on settings established by IT, ECM collects asset, security and configuration data settings across the university and stores them in a CMDB. The solution tracks changes as they are happening, alerting IT staff immediately, and keeping a historical record to support reporting.

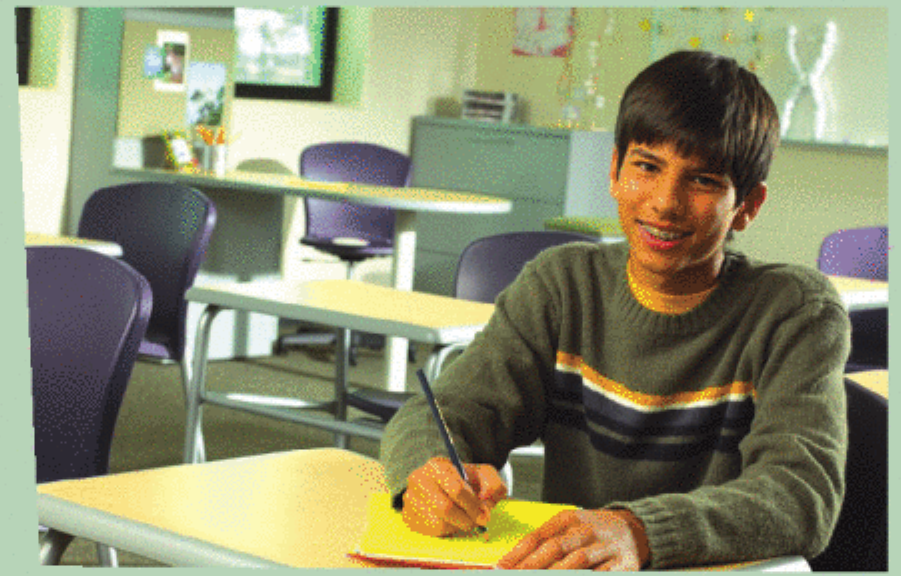
**Circle 305 for more information ■ freeproductinfo.net/asu**

MARKETPLACE




**Circle 200 for more information**

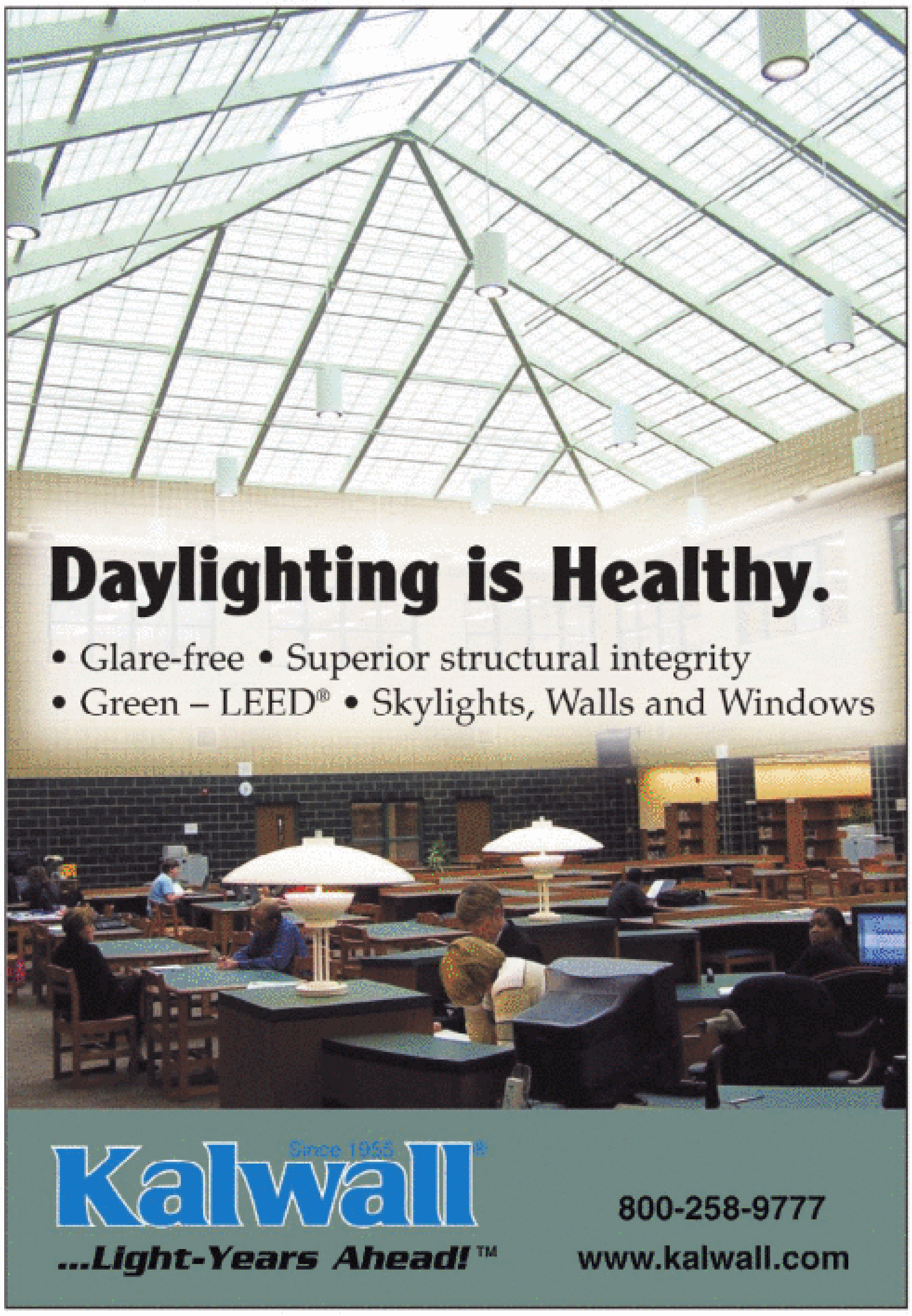
*HON Classroom Furniture*



HON offers a full range of smartly styled furniture for classrooms, cafeterias, teachers' lounges, libraries and administrative offices. Ergonomically designed for comfort, durability and style, HON is a smart investment now and in the future.

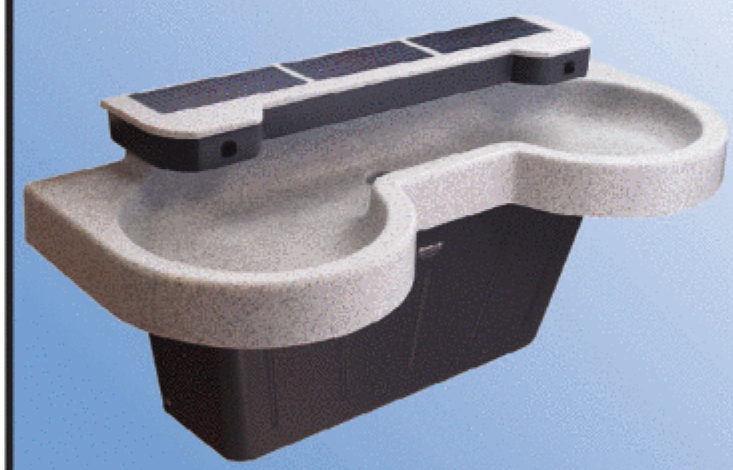
For more information visit us at:
***HONkids.com***

**Circle 201 for more information**




Circle 202 for more information

## BRADLEY LIGHT-POWERED LAVATORY SYSTEM



Eliminate expensive batteries and ongoing maintenance with Bradley's light-powered hand-washing fixture. The patented ndite™ technology converts restroom lighting into electricity – no batteries or electrical hook-ups needed. Photovoltaic cells integrated into the top of the Express® SS and MG series lavatory systems store light energy, which activates the flow of water. For more information, call **800-BRADLEY** or visit ***www.bradleycorp.com***.

Bradley Corp.
W142 N9101 Fountain Blvd.
Menomonee Falls, WI 53051
**(800)-Bradley**
***www.bradleycorp.com***

Bradley

Circle 203 for more information

THE AMERICAN INSTITUTE OF ARCHITECTS

*There's been a lot of talk about changes in our climate lately. CO2 emissions, dwindling resources, and energy usage are growing concerns in every walk of life. AIA Architects, in particular, want to address those concerns. We strongly believe that the time for talk has passed, and now it is time to walk the walk.*

**The American Institute of Architects**
**1735 New York Avenue, NW**
**Washington, DC 20006**
**(202) 626-7300**
**www.aia.org/walkthewalk**

Circle 204 for more information

**Make worn and dangerous stairs like new again!**
**Reduce accidents and owner liability with**
**STAIRMASTER®**
**safety renovation treads by WP "WOOSTER"**

**FROM THIS...** **TO THIS!**

**Economical Stair Repair • Prevent Falls**
**Indoor/Outdoor Application • ADA Compliant**
**Glow-in-the-Dark Treads & Nosings Available**

WOOSTER PRODUCTS INC
1000 Spruce St., Wooster, OH 44691
330-264-2844 • 800-321-4936
Fax: 330-262 4151
Web Site: www.wooster-products.com
E-mail: sales@wooster-products.com

Circle 205 for more information

# Find effective library solutions in our new catalog.

With a Smith System library solution, not only will your library furniture match, it can match the furniture in the rest of your school. To see your options for library, classroom and computer lab solutions, ask your Smith System dealer for our 2008 catalog, call 800-328-1061 or visit www.smithsystem.com

smith system

*Furniture for student success.*

Circle 206 for more information



## *Meet Green Cleaning Standards with the Super CoachVac® HEPA from ProTeam*

ProTeam® introduces the Super CoachVac® HEPA, the most powerful and cleanest backpack vacuum on the market. Its 10-quart high efficiency HEPA Level Filtration™ system makes it ideal for ridding larger areas of airborne particles such as mold, yeast, and bacteria. Comes with a 3-year warranty on parts and labor.

***www.pro-team.com***

Circle 207 for more information

MAJOR INDUSTRIES

## SKYLIGHTS & TRANSLUCENT CURTAINWALL

Guardian 275® Ridge Skylight

Guard-Tite™ Curtainwall

Students and schools come to life with energy-saving Guardian 275® Translucent Daylighting Panels and Auburn® glass, acrylic, and polycarbonate skylights.

**NEW Guardian 275® Translucent Daylighting Idea Guide Now Available!**

**888-759-2678**

**www.majorskylights.com**

Circle 208 for more information



Solutions

TOTAL ROOFING AND BUILDING ENVELOPE SOLUTIONS.

Tremco's Roofing and Building Maintenance delivers nationwide capabilities, including: facility asset management programs; restoration and renovation of roofs, façades and parking garages; asphalt paving; HVAC system design; upgrades and maintenance.

For more information, please call 1-800-892-1872.

TREMCO

www.tremcoroofing.com

Circle 209 for more information

Action occurs in various forms.

[Like solid maple, synthetic polyurethane and recycled rubber — all environmentally friendly.]

The makers of America's finest solid, hardwood maple sports floor systems also offer the only totally solvent-free synthetic polyurethane surfaces on the market. Action Herculan®, with its exclusive water-based non-toxic top coat, is a cost-effective "green" solution (requires no masks or building evacuation during installation). For weight or fitness rooms, Action ReFlex™ recycled rubber flooring offers a tough, non-skid, high-impact and shock-absorbent surface. For a quote or to match a project spec, call 800.746.3512.

Serving the global marketplace.

Action FLOOR SYSTEMS LLC

actionfloors.com
info@actionfloors.com

**Circle 210 for more information**

## New Full-Stage Acoustical Shell

The new Forte™ Full-Stage Acoustical Shell from Wenger is ideal for small- to medium-sized performance venues, providing acoustical and aesthetic benefits in a cost-effective, user-friendly solution.

Acoustically, the side and rear towers combine with ceiling panels to create an effective enclosure that reflects and diffuses sound. This improves onstage communication between musicians and sound projection to the audience. A wide color selection and attractive laminate finish options are available.

Call **800-4WENGER** or visit us at ***wengercorp.com*** for more information.

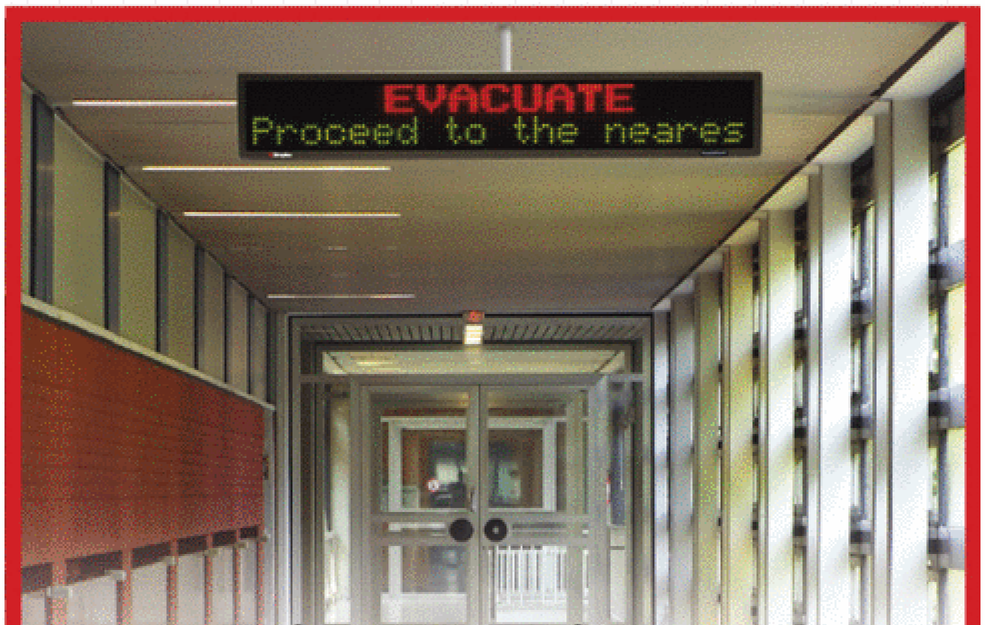
**Circle 211 for more information**

# PLANNING A NEW SCIENCE LAB?

Safely filter chemical fumes without construction costs. Ductless Fume Hood technology provides a portable solution for your new lab or renovation. Call to learn more.

**1-800-694-9612**
**www.misonix.com**

**Circle 212 for more information**




## SIMPLEX® TRUEALERT® EMERGENCY VISUAL MESSAGING APPLIANCE

***Visual text information can help guide people in an emergency***

New visual notification device can help protect gymnasiums, subway stations, airport terminals, factories, office buildings and more, where high noise levels and poor acoustics can muffle voice messages. An electronic readerboard displaying two-line, easy-to-read LED text messages, the TrueAlert Messaging Display strengthens Simplex addressable fire alarm systems emergency notification capabilities.

SimplexGrinnell
BE SAFE.

For more information, visit ***www.simplexgrinnell.com*** or call **800-746-7539**.

**Circle 213 for more information**

PROFESSIONAL BIRD CONTROL PRODUCTS

The Industry Leader Since 1992!

The #1 Specified Bird Control Products by Architects & Government Agencies.

Longest Guarantees!

Stainless Steel Bird Spikes | Bird Netting | Shock Track Systems

Over 100 Products Available!

- Effective and Humane Bird Control!
- Lowest Cost, Highest Quality Products Keeps Job Costs Down!
- VIRTUALLY INVISIBLE / DISCREET SOLUTIONS!

Guaranteed Solutions for ALL Pest Bird Problems!

Call 1-800-392-6915

For Free Samples & Information

BIRD•B•GONE INC.
nobirds@birdbgone.com
www.birdbgone.com/ASU

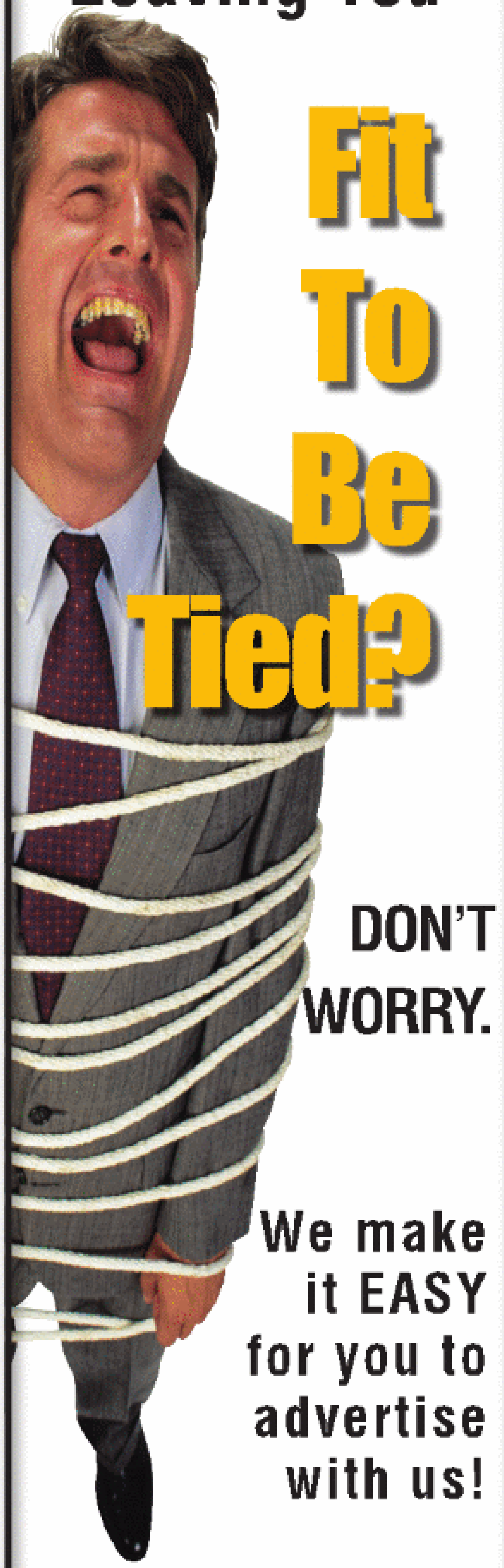
GSA Advantage! www.gsaAdvantage.gov # GS-06F-0075P


Circle 214 for more information


Get today's top SCHOOL HEADLINES from around the world!

www.asumag.com

Is Ad Design Leaving You



We offer complimentary creative services when you place an ad in *AS&U's* Martketplace, Literature for Administrators or Classifieds.

Just send us your artwork & text, and we will build your ad for you!

For details, contact

GARY KAZMIER @770.618.0374

Circle 215 for more information

# AD INDEX

For more information on products and services for education facilities and business, refer to the advertisements of interest and circle the corresponding reader service numbers on the free info cards.


| Circle No. | | Page No. |
|---|---|---|
| 127 | Action Floor Systems | 53 |
| 210 | Action Floor Systems | 63 |
| 120 | The American Institute of Architects | 41 |
| 204 | The American Institute of Architects | 61 |
| 108 | Artco-Bell | 19 |
| 214 | Bird-B-Gone | 64 |
| 215 | Bird-X | 65 |
| 102 | Bobrick Washroom Equipment | 3 |
| 121 | Bradley Corp | 43 |
| 203 | Bradley Corp | 61 |
| | Concrete Industries, Inc | 34a-b |
| 110 | Corbin Russwin | 23 |
| | Direct Energy | 18a-b |
| 123 | ECORE International | 47 |
| 124 | Electrolux | 48 |
| 125 | Electrolux | 49 |
| 107 | EverProducts | 15 |
| 117 | Excel Dryer, Inc | 35 |
| 116 | Falcon Waterfree Technologies | 33 |
| 101 | Forbo | IFC |
| 105 | HON | 9 |
| 201 | HON | 60 |
| 122 | Kalwall | 45 |
| 202 | Kalwall | 61 |
| 112 | Knight Celotex | 27 |
| 113 | Knight Premium Flooring | 28 |
| 128 | LenSec | 55 |
| 208 | Major Industries | 62 |
| 212 | Misonix | 63 |
| 111 | The Mohawk Group | 25 |
| 132 | PROSOCO | 58 |
| 119 | ProTeam | 39 |
| 207 | ProTeam | 62 |
| 118 | Roppe | 37 |
| 200 | Salsbury Industries | 60 |
| 106 | SANYO | 13 |
| 126 | SCA Tissue | 51 |
| 129 | Sico America Inc | 56 |
| 115 | SimplexGrinnell | 31 |
| 213 | SimplexGrinnell | 63 |
| 103 | Sloan Valve Company | 5 |
| 130 | Sloan Valve Company | 58 |
| 134 | Smith System | BC |
| 206 | Smith System | 62 |
| 131 | Steril-Aire | 57 |
| 114 | Tandus | 29 |
| | TechEd | 59 |
| 109 | TMA Systems | 21 |
| 104 | Tremco | 7 |
| 209 | Tremco | 62 |
| 133 | Virco | IBC |
| 211 | Wenger Corporation | 63 |
| 205 | Wooster Products, Inc. | 61 |


***For ad production questions, deadlines and ad specifications, please contact Jessica Andreas at (913)967-1845, Fax (913)514-7087.***

## SALES TEAM


**Inside Sales**
**Gary Kazmier**
6151 Powers Ferry Road NW,
#200, Atlanta, GA 30339
Phone (770) 618-0374
Fax (770) 618-0204
gary.kazmier@penton.com

**National Sales Manager**
**Bill Perry**
6151 Powers Ferry Road NW,
#200, Atlanta, GA 30339
Phone (770) 618-0453
Fax (770) 618-0349
bperry@asumag.com

Serving: AL, AR, FL, GA, LA, MS, NC, OK, SC, TN, TX

**JoAnne Romanek**
306 Shaker Lane
West Chester, PA 19380
Phone (913) 981-6132
Fax (913) 514-6356
jromanek@asumag.com

Serving: CT, DC, DE, IA, KY, ME, MD, MA, MI, MN, NH, NJ, NY, OH, PA, RI, VT, VA, WY, Eastern Canada

**John Pellettieri**
13315 Constable Avenue
Granada Hills, CA 91344
Phone (818) 368-5620
Fax (818) 368-1699
jbp7@earthlink.net

Serving: AK, AZ, CA, HI, ID, MT, NV, OR, UT, WA, WY, Western Canada

**Tom Nilsen**
269 S. Old Creek Road
Vernon Hills, IL 60061
Phone (847) 634-0850
Fax (913) 514-3969
tom.nilsen@penton.com

Serving: CO, IL, IN, KS, MO, NE, NM, ND, SD, WI



Editorial Business Office: 9800 Metcalf, Overland Park, KS 66212-2216. (P.O. Box 12901, Overland Park, KS 66282-2901).
Phone: (913) 341-1300, Fax: (913) 967-1905, Website: www.asumag.com

**American School & University** (ISSN: 0003-0945) March 2008, Volume 80, Number 7, published monthly, with a 13th issue in May, free to qualified persons in the United States, by Penton Media, Inc., 9800 Metcalf Ave., Overland Park, KS 66212-2216 (penton.com). Subscription rates: Free and controlled circulation to qualified subscribers. Non-qualified persons may subscribe at the following rates: USA: 1 year, $69, 2 years, $109; Canada: 1 year, $79, 2 years, $139; other international: 1 year, $99, 2 years, $159. For subscriber services or to order single copies, write to American School & University, P.O. Box 2100, Skokie, IL 60076-7800 USA; call (866) 505-7173 (USA) or (847) 763-9504 (Outside USA); or visit www.asumag.com. Periodicals postage paid at Shawnee Mission, KS and additional mailing offices. Canadian Post Publications Mail Agreement No. 40612608. Canada return address: Bleuchip International, P.O. Box 25542, London, ON N6C 6B2. **POSTMASTER:** Send address changes to American School & University, P.O. Box 2100, Skokie, IL 60076-7800 USA. Allow 6 to 8 weeks for change of address.

Copyright ©2008.

What did you wish for today?
straight hair
new car
lose 6 lbs.
Derek's phone number
comfortable school furniture
Classroom comfort certainly isn't the first thing on the minds of our kids, but it's an important part of their school experience. Children spend more time sitting in classroom chairs than any other piece of furniture outside the home. Because classroom ergonomics is one of the newest concerns in today's schools, Virco offers the widest range of seating solutions of any US manufacturer. From the new Telos™, Metaphor™ and Sage™ collections to our award-winning ZUMA®, ZUMAfrd™ and I.Q.® Series chairs, desks and combo units, Virco products are designed in sizes to fit kids from kindergarten through college. Our Ph.D.® Series offers a terrific selection of task chairs for dorms, instructor's stations and administrative offices. And nearly all Virco products are GREENGUARD® certified, meeting another growing concern – indoor air quality.
Ph.D.®
Metaphor™
ZUMA®
Telos™
Sage™
ZUMAfrd™
I.Q.®
Virtuoso®
Call us today at 800-813-4150 or visit www.virco.com
VIRCO® - equipment for educators™
REF# 08024
©2008 Virco Inc.
GREENGUARD Indoor Air Quality Certified
Circle 133 for more information ■ freeproductinfo.net/asu

# Seating that doesn't just sit there.

The Intuit Chair welcomes, engages and interacts. Designed to meet the demands of cooperative learning, it plays an active role whether it's in the classroom, computer lab or library. To learn more, visit us on the web or ask your Smith System dealer for our 2008 catalog.

smith system

*Furniture for student success.*

www.smithsystem.com

The GREENGUARD INDOOR AIR QUALITY CERTIFIED Mark is a registered certification mark used under license through the GREENGUARD Environmental Institute.

**Circle 134 for more information ■ freeproductinfo.net/asu**